The Industry Newspaper for Software Development Managers

FEBRUARY 15, 2003

ISSUE NO. 072

Rogue	Wave	? Turns	Over	
New 'L	EIF'	on Inte	gration	

BEA Previews 'XMLBeans' For Java Translations4

Wily, PATH Introduce Management Tools For 'Live' Apps 6

JMX Studio Gets SOAP Adapter

Xerox to Transform XML With Circus

Microsoft Shelves Plans To Release Help 2

Macromedia Offers MSDN-Style Subscriptions ..12

Borland Announces Earnings, Reshuffling14

DreamFactory Envisions Rich-Client Interfaces16

QNX Adds Layering

To Neutrino API

CardSoft Claims Impenetrable Security

JCP Expert Group Maps **Future of J2ME Devices**

AppForge Now Targets .21

Xilinx Unleashes Multimedia Board21

SPECIAL REPORT:



Driving Web Services **FIRST LOOK:**

Xtreme Simplicity's C# Refactory, JetBrains' IntelliJ IDEA ...30

A BZ MEDIA PUBLICATION

www.sdtimes.com

BORLAND PUSHES OPTIMIZEIT TO JAVA ENTERPRISE SERVERS

Also licenses Microsoft's .NET Framework SDK for inclusion in Delphi, C++ Builder

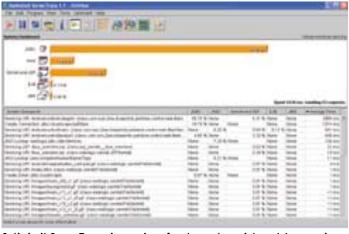
BY ALAN ZEICHICK

Borland Software Corp. has released a new version of its Optimizeit performance-testing tool, traditionally for J2SE desktop applications but now for Java server apps as well. The

company also has licensed Microsoft's .NET Framework SDK, and will be bundling it with its .NET-compatible language tools.

According to Bill Pataky,

► continued on page 14



Optimizeit ServerTrace gives a view of system entry points and Java services.

Sun Jumps On Modeling Bandwagon

Will bundle Embarcadero's Describe UML tool with Sun ONE Studio

BY DAVID RUBINSTEIN

First, Borland Software Corp. announced in November it was acquiring UML modeling capability for its development tools with the US\$185 million purchase of TogetherSoft Corp. Then, in December, IBM Corp. made a US\$2.1 billion bid for Rational Software Corp., to add modeling and other capabilities to its development environment.

Now, Sun Microsystems Inc. has announced it has completed a deal with Embarcadero Technologies Inc. to include Embarcadero's Describe version 6.0

modeling tool with the Sun ONE Studio version 4 development environment.

Sun ONE group marketing manager Jeff Anders denied the bundling is a reaction to the Borland and IBM moves, saying, "That percep- The bundling validates tion would be incor- modeling, says Embarrect. Our discussions cadero's Keller.



with Embarcadero have been going on for some time." The first word of a partnership between the companies was issued in June 2001.

The timing of the IBM, Borland and Sun announcements is coincidental, Anders said, and "not indicative of the work that's been done." Anders acknowledged that from a purely financial standpoint, it could appear that IBM and Borland are making a larger investment in UML technology than Sun is, which is merely packaging Describe with Sun ONE

> Studio and is not as of now licensing the tool. "The perception will be what the perception will be," Anders said. "Our customers told us they want a good modeling tool bundled with the IDE. That's what we're providing.'

> > Greg Keller, direc-► continued on page 14

JCP Embraces WS-I for J2EE 1.4

Adoption will delay forthcoming release until midyear

BY ALAN ZEICHICK

The Java Community Process, Sun Microsystems Inc.'s governing body for its Java specifications, has decided to adopt the Web Services Interoperability Organization's interpretation of key Web services standards.

This decision by the J2EE Expert Group will require reworking portions of the J2EE 1.4 specifications, reference implementation and compatibility suite, according to Ralph

Galantine, Sun's group marketing manager for Java Web services. This pushes the final release of J2EE 1.4, previously predicted for March, back several months, jeopardizing its debut at JavaOne, Sun's developer conference scheduled for June 10-13 in San Francisco.

We're going to bring support for the WS-I Basic Profile into J2EE 1.4," said Galantine. The Basic Profile, released in October 2002, is described by the WS-I (www.ws-i.org) as a set of nonproprietary Web services specifications, along with clarifications to those specifications that promote interoperability.

Those changes will affect several Java specifications that fall under Java Service Request 109, the umbrella specification for Java-based Web services, but would have the most severe impact on JAX-RPC, the Java API for XML-based Remote Procedure Calls. The changes "are somewhere between trivial and a major rewrite," he said.

"It's significant work in the SOAP specification," Galantine explained. "The Basic Profile takes a SOAP 1.1+ approach, specifying areas in the SOAP specs that were incomplete, vague or open to interpretation. [WS-I] picked certain interpretations, and in some cases our Expert Group had made different interpretations. We're now going back to make the same choices as the WS-I, so developers can get interoperability directly from J2EE 1.4." ■

TARGETS ORACLE, .NET

BY ALAN ZEICHICK

XML Spy, Altova Inc.'s editor for XML documents, has new .NET and Oracle capabilities, as well as features for generating WSDL and PDF documents.

Version 5 Release 3 of XML Spy, which shipped at the end of January, now can work with Microsoft's C# language, according to the company. This allows developers to model an XML schema using XML Spy, and then export the C# classes for binding that schema to .NET. Those classes work with System.XML, Microsoft's API for programmatically accessing XML documents.

► continued on page 12



Perforce's Software Configuration Management System is the choice of developers because no other tool can match the speed, control and reliability that it brings to the management of your source code.

Maintain your top speed no matter how many users or files. At the core of Perforce lies a relational database with well-keyed tables, so simple operations can be accomplished in near-zero time. Larger operations (like labelling a release and branching) are translated into keyed data access, giving Perforce the scalability that big projects require.

Install it fast, learn it fast, execute operations fast.

With other SCM systems, developers face an unpleasant choice: do it the right way or do it the fast way. Perforce's speed and reliability mean the fast way is always the right way. See how Perforce compares at http://www.perforce.com/perforce/reviews.html

Work anywhere. Perforce is efficient over high-latency networks such as WANs, the Internet and even low-speed dial-up connections. Requiring only TCP/IP, Perforce makes use of a well-tuned streaming message protocol for synchronising client workspace with server repository contents.

Develop and maintain multiple codelines.

Perforce Inter-File Branching™ lets you merge new features and apply fixes between codelines. Smart metadata keeps track of your evolving projects even while they develop in parallel.

Supports all development platforms.

Perforce runs on more than 50 operating systems, including all flavors of Windows*, UNIX*, Linux*, Mac OS* X and more.

Integrate with leading IDEs and defect trackers.

Including VisualStudio.NET*, Visual C++*, Visual Basic*, JBuilder*, CodeWarrior*, TeamTrack*, Bugzilla**, ControlCenter*, DevTrack* packages and more.



Fast Software Configuration Management www.perforce.com

Rogue Wave Turns Over New 'LEIF' on Integration

Bobcat C++ servlet container becomes foundation for its EAI framework

BY EDWARD J. CORREIA

Leveraging its previous work in EAI consulting and its Bobcat C++ servlet container introduced last fall, Rogue Wave Software Inc. in late January released the Lightweight Enterprise Integration Framework, a tool that it says permits developers to easily integrate existing or new C++ client and server applications with .NET and J2EE applications and Web services. As part of this product introduction, Rogue Wave will no longer sell Bobcat separately, and is offering current Bobcat customers a free upgrade to LEIF.

According to Tim Triemstra, LEIF product manager, the most typical usage scenario would involve an existing C++ application that needs to integrate with a new .NET client or J2EE server app. "The easiest way to integrate those is to have them talking Web services," he said. "They would give their WSDL file to LEIF, which would generate C++ classes that encompass the entire process of communicating by way of Web services." Those classes are then converted into a client or server application, he said, using the developer's own makefile utility, with all functionality present in the WSDL file recreated in C++.

Triemstra said the thrust of Rogue Wave's (www.roguewave .com) business has been to simplify programming by distancing developers from hardware-specific problems. "[Our] products abstract away complicated tasks such as networking and threading. What we've done with LEIF is to take Web services, something people need, and used our existing technologies to create an abstraction. Its primary focus is to make it easy to bind XML and Web services on both client and server to existing C++ applications or new ones. It's for anyone who's doing active C++ development that can benefit from integration with the rest of the enterprise."

LEIF builds on Bobcat, Rogue Wave's C++ servlet engine, which Triemstra compares functionally to the Apache Project's Tomcat Java

Servlet engine. "It can directly [execute] C++ programs and has the ability to dynamically load and shut down server

[apps] to automatically multithread and keep track of session state." He added that LEIF can run within an existing Web server or stand alone available now for Linux, Unix using the Apache Web server, which is included.

Pricing for LEIF, which is

and Windows, starts at US\$995 per developer seat plus \$1,995 per server processor. ■



How long can you wait for CMM Compliance?

Manage your software development in guaranteed compliance with the SW-CMM® NOW!

processMax includes all the necessary policies, procedures, guidelines, criteria, templates, and forms in role-based, step-by-step instructions, ready for use-everything you need for SW-CMM compliance. Integrated with robust document management and workflow, processMax is the intranet web-based solution for effective and efficient management of your software development projects.



www.pragmasystems.com

Visit us in Booth 417-419 at the Software Engineering Process Group Conference, February 24-27, in Boston!

pragma Systems Corporation • 11260 Roger Bacon Drive, Suite 202 • Reston, VA 20190 877.838.PMAX • E-mail: info@pragmasystems.com

GSA Schedule Contract No. GS-35F-0620K. processMax is a registered trademark of pragma Systems Courosumon DAM is a registered trademark of Carnegie Mellon University: Copyright ©2003 pragma Systems Courcination

BEA Previews 'XMLBeans'

Web-based service translates document schemas to Java classes

BY ALAN ZEICHICK

Claiming that the XML Schema specification is often too complex for developers to work with,

BEA Systems Inc. is demonstrating XMLBeans, a Web-based service that automatically generates Java classes for interpreting complex documents. The service, available now, can be used to experiment with the new concept, but cannot yet be used for commercial deployments.

According to Carl Sjogreen, senior product manager for BEA WebLogic Workshop, the

challenge is providing access to structured XML data without losing its structure. "We hear from customers that XML is everywhere, but the current solutions for writing applications on top of XML don't fit their needs," he claimed. "At one level, you have APIs, like SAX and DOM, that give you full access to the XML but are tedious to write code with. At the other level, there are technologies that force-fit XML into Java classes, but you lose a lot of the rich information in the XML, particularly around schema constraints.'

That means, he said, that programmers have to write code that duplicates the validation logic and business rules that are already defined by the XML Schema. That code is brittle, he said, since it can't dynamically accommodate changes in the schema.

"XMLBeans are meant to be the best of both worlds," Sjogreen continued. "It allows you to keep the XML in its original form, and access it using convenient APIs. We support XQuery, so you can access the XML. But we automatically build a set of Java classes for views of that data, so you get the convenience of Java classes.'

Those classes come from a free hosted service, at http: //workshop.bea.com/xmlbeans, that accepts an XML Schema specification and returns a Java JAR file containing the new classes. "It's a technology preview," said Sjogreen, who added that the JAR files are pure Java and are compatible with competing J2EE app servers such as IBM's WebSphere or Sun's Sun ONE, as well as IDEs like Borland's JBuilder.

For now, the Java classes generated can't be used for deployment, said Sjogreen. "[XML-Beans] is currently in beta form, so it's a development-only evaluation license." Sjogreen said that XMLBeans will be bundled with future versions of BEA's Web-Logic platform, but he wouldn't address licensing fees for deploying XMLBeans using non-BEA app servers. "We'll offer some sort of community license, but that's still to be worked out," he promised.

"We're committed to making [XMLBeans] a standard, in the way that makes the most sense," he concluded, but couldn't specify a time frame or standards organization with which BEA would work. ■

Find slow .NET code fast!



ANTS Profiler is a simple code profiler which measures the time your .NET code takes to execute, whatever programming language you've used. ANTS Profiler will successfully identify problem areas in your code.

- Find slow methods
- ☑ Drill down to individual line timings
- Find slow code in under 5 minutes

visit www.red-gate.com for more information or your free trial.



simple tools for Microsoft developers and DBAs

Compare SQL databases





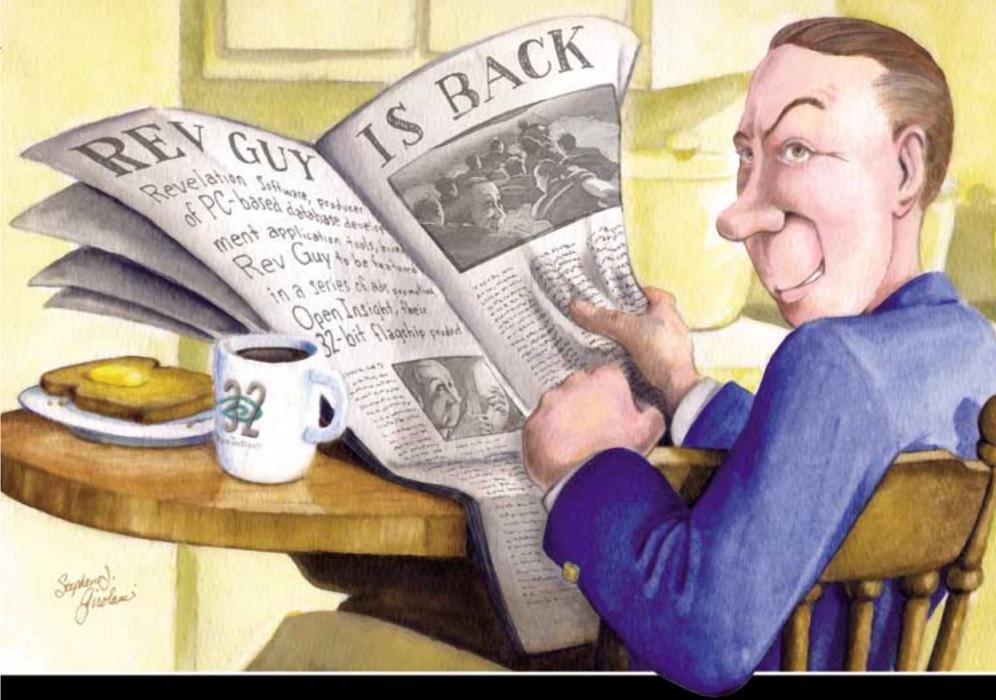
Red Gate's SQL Tools allow you to compare and synchronize the structure and contents of Microsoft SQL Server databases. They are invaluable for moving databases between development, test, staging and

- Compare SQL Server database data and structure
- Synchronize Microsoft SQL Server database data and structure
- Save days of tedious work

visit www.red-gate.com for more information or your free trial.



simple tools for Microsoft developers and DBAs



BACK? GIVE ME A BREAK. I BUILT THIS COMPANY!

I'm sure I don't need to tell you that OpenInsight is the only application you'll ever need for building and deploying rich, powerful and scalable database applications that will run just about anywhere you want - on LANs, WANs, or the web.

Out of the box, OpenInsight comes with a database with features unrivaled in the industry. In its native format it is fully compatible with Advanced Revelation and most variable length multi-dimensional data management products.

OpenInsight is the workhorse of database applications. And like me, it has matured nicely over the years.

Want to publish your data to the web? Not a problem. OpenInsight can publish both static and dynamic HTML. Need XML support? You've got it. Data can be created, exported or



maintained directly in XML, or requests can come in via the web and OpenInsight will generate XML data on-the-fly. OpenInsight's client/server tools feature a query window, a SQL script-building assistant, database connection builder and a DataSet Object definition tool to let you access data from sources other than your own Revelation data. OpenInsight also gives you data warehousing at its finest. Take your pick – ODBC, SQL Server, Notes or Oracle.

And with OpenInsight's intuitive IDE, developing your applications couldn't be easier. The IDE includes a form designer, system editor and debugger, a popup designer for creating data lists, and Revelation Reporter for creating presentation-quality reports; won't your CFO be impressed.

Folks, I have a lot more I want to tell you about OpenInsight, but my coffee is getting cold. For more information about OpenInsight, or about OpenInsight training classes at Revelation Headquarters or one of our Authorized Training Centers (ATCs), go to www.revelation.com/sdt/sdthome or call 800-262-4747.

99 Kinderkamack Road, Suite 109, Westwood, NJ 07675 | 800-262-4747 | 201-594-1422 | Fax 201-722-9815



News Briefs

COMPANIES

Windows embedded tools vendor BSquare Inc. is offering a "jump start" service for helping customers build on Microsoft Corp.'s Windows XP Embedded ... Sleepycat Software Inc. now is offering two free months of support for developers evaluating its open-source Berkeley DB embedded database software . . . Silicon Graphics Inc. has expanded its developer program to include Linux, as well as SGI's proprietary Unix version, IRIX.

PRODUCTS

Version 3.5 of Source Dynamics Inc.'s Source Insight code analyzer now supports C# and other Windows-managed code that uses the .NET Framework. It also offers increased data security, new tools for roaming developers and more document options. The code analyzer. priced at US\$249, also works with C/C++ and Java code . . . Kenamea Inc. has updated its Kenamea Web Messaging Platform to give servers or user devices event-driven access to SOAP-DOC or SOAP-RPC-based Web services. Version 2.1 also includes new APIs for COM and .NET applications, new monitoring and admin features and an enterprise service bus . . . XAware Inc., which sells XML dataexchange software, has released a set of software components that allow for financial-services applications to communicate using RIXML, the Research Information Exchange Markup Language . . . Imaging Source Europe GmbH has released a .NET Windows Forms version of its TX Text Control royalty-

free word-processing component. The component remains available as an Active X component and C++ class library . . . Dart Communications Inc. has released a version of its PowerTCP Telnet component for .NET. The US\$349 component, which does not have deployment royalties, allows .NET desktop and server applications to use the telnet, rsh, rexec and rlogic communications protocols . . . ComponentOne LLC has shipped WebReports for ASP.NET, a Web Forms reporting package for .NET applications. The component is priced at US\$399.95, and also is included in the \$649.95 ComponentOne Studio for ASP.NET suite . . . Microsoft Corp. is running a public beta of its Visual FoxPro 8.0 database, which is scheduled to be generally available in March. The new release offers structured error handling, new base classes and controls, improved compatibility with VS.NET and SQL Server 2000, and access via Web services. The company also has released version 9.0 of its DirectX SDK, which allows developers to write code that exploits multimedia hardware capabilities. New with version 9.0 is HLSL, a new high-level shading language based on C. The SDK can be downloaded from www.microsoft.com/directx. Microsoft also has released SQL Server 2000 Service Pack 3, which focuses on secu-

rity enhancements . . . Eiffel Software Inc. has updated its EiffelStudio IDE and compiler for Unix. Version 5.2 includes a redesigned GUI builder, upgrades to the debugger and the ability to call external tools from within Eiffel-Studio. This version already was available for Linux and



Windows . . . Version 9.0 of Crystal Enterprise, the database reporting package from Crystal Decisions Inc., adds new ad hoc reporting and analysis features, data-driven alerting via e-mail, new tools for reusing common report components, and tighter integration with COM, Java and .NET applications . . . OpenLink Software Inc. is offer-



ing a public beta of Virtuoso 3.0. The update of the cross-platform database server now works with Microsoft's .NET, as well as Mono, the .NET compatibility project for Linux . . . Softel vdm Inc. has updated its

Masked Edit Field control for Windows. SftMask/ATL 5.0, delivered as an ActiveX component, integrates with VS.NET's Help engine, and also offers improved auto-completion and a pop-up calculator. The component costs US\$339 per developer, and is royalty-free Numerical Algorithms Group Ltd. will be releasing a Core Math Library for AMD's 64-bit Opteron and Athlon 64 processors . Desaware Inc. is offering NT Service Toolkit for .NET, which makes it easier to test and debug Windows NT services that use .NET managed code and the .NET Framework. The > continued on page 14

Making Applications Behave In Production Environments

Wily, PATH introduce management tools for 'live' apps

BY DAVID RUBINSTEIN

Claiming that software testing falls short once an application is placed into a live environment, two companies—Wily Technology Inc. and **PATH Communications** Inc.—late last month released products into what is being called the application behavior management space.

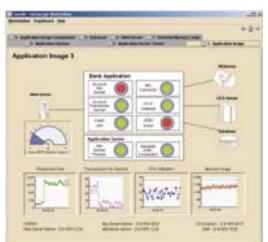
Wily released version 4 of its management solution, which includes two new extensions to

Introscope—Transaction Tracer and Leak Hunter. Transaction Tracer brings visibility to transactions down to the Java Virtual Machine (JVM) level, according to Lew Cirne, founder and CTO of Wily (www.wilytech.com), while Leak Hunter is designed to help IT teams find memory leaks in production applications.

There are lots of tools that help developers develop, test and deploy, and there are lots of application monitors," said Mike Malloy, marketing communications vice president at Wily. "Now, developers are told by systems management that the app isn't running right and it's your problem; you figure it out." Wily's new tools, he said, give developers the specific details they need to fix problems because they're running on the app in a live production environment, not on a desktop or in a QA lab.

"It's so difficult and expensive to replicate a production environment in a staging environment, that folks reboot systems on a frequent basis just to avoid having to deal with a leak problem," Malloy said. "That's not real good systems management. What you're doing is destroying quality of service. Your availability goes into the low 90s, and if you have a 24/7 critical app, that's unacceptable."

Meanwhile, PATH has released version 3.5 of its Path Application Manager (P.A.M.), which utilizes intelligent agents to recognize patterns of behavior in software and anticipate failure, according to Oded Noy,



Introscope version 4 and Wily users can create a dashboard to monitor whole apps.

co-founder and CTO of PATH (www.contactpath.com).

"We're getting into an area where applications are so intertwined that things occur [in the application] that never happened in testing. What we do is really a software MRI," Noy said.

The P.A.M. solution includes Examiners, which are the intelligent agents—discrete Java applications—that can be placed on multiple servers to take snapshots of applications when they are running, looking at throughput, responsiveness, resource utilization and XML parsing, among other things. These snapshots then are processed in a central server, which establishes a pattern of behavior for the software.

If there is an abnormal spike in the activity of the XML parser, for instance, or a method takes longer to execute than expected, the developers with domain experience can come in to assess and fix the problem. "You can find the problem without having to assume what it might have been. This points you to a method and says it's not normal," Noy said.

P.A.M. users, Noy added, can check the performance at any time with a browser-based client monitor that does not require a VPN for connectivity. The solution is Java-based, but Nov said support for Microsoft .NET will be completed by March or April.

One P.A.M. server can handle 100 agents, Noy said, and sells for US\$5,000 per server.

Wily, meanwhile, has rolled out Wily 4, which enables IT organizations to monitor their live applications around the clock, with the ability to drill down to assess performance

The key new features in Introscope 4 include a free-form control dashboard, which developers can customize "down to the very pixel," Cirne said. "As every application and environment are unique, customers can take this vast array of deep data and convey

it how they need it. A DBA wants to look at the data set in a different way than the developer." Introscope 4 also introduces environment performance agents, which collect data external to the JVM, and provides metrics to show how other factors impact that JVM's performance, Cirne said.

Cirne said Introscope Transaction Tracer can automatically discover those transactions that are running slower than the time set in a predefined parameter. "We call it 'speed trap technology.' Say we want to see the transactions that take more than 10 seconds. We only get the bad ones without having to go through all transactions." Introscope employs agents that are deployed in the JVMs of the Java applications being managed; the agents report to an enterprise manager that correlates the information and presents it to the user.

Leak Hunter solves what Cirne called "the No.1 problem that affects Java application performance"—memory leads. "This tool has the ability to reduce downtime in Java applications more than anything that's on the market," he claimed. Leak Hunter identifies tied-up memory allocations so the user can quickly target the responsible component, whether it's an Enterprise Java-Bean or a Java Servlet.

Introscope 4 is sold on a perserver processor basis; the base price for a single processor is just over US\$6,000, Cirne said. The new extensions cost about \$2,000 each, he added. ■



ARE YOUR TOOLS UP TO THE CHALLENGE?

It's a fact. Only the best of tools can help you meet the ever-increasing challenges of advanced systems and software development. And you'll only find these tools at Telelogic.

Whether for requirements management, development, change/configuration management or test, our tools are consistently ranked as technology or market leaders by industry analyst firms like Gartner, OVUM, Standish Group, VDC, and Yphise. What's more, our high-productivity tools actually deliver on their promises: reduced costs, increased quality and faster time-to-market. That's why you'll find them used worldwide by market leaders like Bank of America, DaimlerChrysler, Hewitt Associates, Lockheed Martin, Motorola, St. Jude Medical and more.

When you're looking for tools to help you overcome the challenges of systems and software development, be sure to add Telelogic to your short list.

To see how Telelogic tools solve development challenges, sign up for a live product demonstration and download the free white paper "Making Better Software Faster," at www.telelogic.com/sdt_ad to For more information on Telelogic. visit www.telelogic.com or call 1.877.275.4777



NEWS , Software Development Times , February 15, 2003

MX Studio Gets SOAP Adapter

To allow developers and administrators to access data from applications built from Web services, AdventNet Inc. has included a SOAP adapter in the recently released version 5 of

its ManageEngine JMX Studio management tool.

According to chief technoloofficer Tony Thomas, the goal is to allow the instrumentation exposed using JMX Studio to be used by multiple applicaadapter is based on Apache's Axis SOAP implementation.

AdventNet (www.adventnet .com) cut its teeth providing application management tools in the telecom and data networking space before moving into J2EE application management, said Thomas, and Sun's Java Management Extensions (JMX) specification provides a standard way to add management instrumentation to enterprise applications.

"You could write your own instrumentation with the JMX API," Thomas said, "but this tool minimizes the amount of work developers have to do." He explained that developers using JMX Studio simply load an EJB or servlet component into the tool, which automatically generates the instrumentation so it can be viewed in a console. While AdventNet offers a management console as part of its Manage-Engine solution, Thomas noted that JMX Studio can be used with any console that supports SNMP or JMX. AdventNet's console supports only BEA's WebLogic application server.

www.sdtimes.com

Thomas also said that when issues arise in applications after deployment, JMX Studio lets developers build monitors into the application after deployment.

Other new features of JMX Studio, which sells for US\$3,000 per developer seat with a deployment fee of \$500 per processor, include support for TIBCO's application integration and business process management environment and Apache's Tomcat servlet engine.

Sagent Opens Links to Data Via ODBC, JDBC

BY DAVID RUBINSTEIN

Data integration solution vendor Sagent Technology Inc. has added ODBC and JDBC access to multiple data sources with the introduction into beta earlier this month of an enterprise information integration tool called OpenLink.

OpenLink, which the company (www.sagent.com) says is SQL-92 compliant, allows thirdparty applications using standard ODBC or JDBC interfaces to connect with Sagent's Access Server, which acts as an inmemory cache for data called out of back-end systems.

According to Sagent marketing vice president Dave Henry, OpenLink gives developers an easy way to integrate data. "Sagent can be the standard middleware tier for analytics in the middle of business intelligence environments" such as those sold by Brio Software or Business Objects, Henry said.

OpenLink sells bundled with Access Server for US\$70,000 per server with two processors. Version 5 of Access Server goes into beta midyear, Henry noted.

VCL COM ACTIVEX C++ CLASS LIBS.

140+ Image

Formats!

RASTER

e cer

SAMP
DAS SAMP
DAS SAMP
DAS SAMP
CUM
ANI
CLP
PCX
DCX
IMG
MAW
FX
WFX
MAC
TILA
RAS
PCT
CMP
OB-2 BA
AND
BF
CMP
O

VECTOR

Take control of your image

With a LEADTOOLS SDK in your hands, your clients or managers will think that you have sport years becoming an expert in the field of imaging. You will be able to handle any request thrown at you.
Whether you need to take control of images in a database, compress and optimize your images for storage, view or add any other image manipulation. Lasks to your applications - you will be able to say "Yes, I can do that?" with a LEADTOOLS imaging toolkit.

RASTER IMAGING

Import and export 140+ raster file compression options, bit depths (up to 32) and color spaces. Progressive and non-progressive modes, multi-page, animation and non-mage

90+Image processing Filters - Transfam resize, rotate, linear and bicubic interpolation, flip, invert, reverse, crop, underlay, shear and Filters - sharpen, intensity, otogram, posterize, median, edge saturation, histogram, po detection, noise and more. Spatial filters gradient, laplacian, sobel, prewitt and more.

Display - scroll, scale with interpolation, anti-alos, dither, contrast, with a choice of over alos, dither, contrast, with a choice of over 2,000 special effects.

Scanning, printing, imaging common dialogs, thumbnall browser, image list, database imaging functions, screen capture and much more!

DOCUMENT IMAGING

Powerful assistation capabilities - Enable the addition of 50+ objects including bext, highlights, sticky notes, audio, and reduction all with user-defined security features.

Document image processing & clean-up Despeckle, deskew, triverted text, removal of data, blobs, lines, borders, hole purches, character smooth. Region of interest, preview of changes and composite viewing of the modified regions.

Optimized viewing of bitonal images Specialized display filters including FavorBlack and ScaleToGray, bilinear and bicubic interpolation. Includes ultra-fast CCITT G-2, G-4 and rotation, 363G compression and a pan-

ScanSoft OCR - ScanSoft SOK 5.0 Pro engir includes preset confidence and accuracy levels, artificial intelligence, and built-in and user-defined lexicons for limiting the type of text to recognize within a particular zone.

INTERNET IMAGING

Client server development over the Internet or LAN - Provides a framework for sending /receiving commands between

Control Image processing remotely -Allows for creation of "remote control" type applications where image processing can take place on a remote computer.

Small COM objects and ActiveX controls Internet enable LEAD/TOOLS Raster imaging functionality but greatly reduce redistribution

New HTTP and FTP functionality - Provides programmatic control of FTP & HTTP servers. Upload Control - Send files to an HTTP servet.

DIGITAL PAINT

Extensive high-level and low-level

MEDICAL IMAGING

DICOM 3.0 - Supports the latest specifications, including all standard IOD classes and modalities (CR, CT, MR, NM, US, RF, SC, VL, Worklet, etc.) и посом финалиу.

DICOM communications protocol COMPLETE support including all Service Classes (Werlfcation, Storage, Query/Retrieve, Patient Management, etc.). High-level communications functions to simplify the creation of DICCM client/server application

Optimized image processing - The richest in the industry supporting 1, 2, 3, 4, 5, 6, 7, 8, 12, 16, 24, 12, 48 and 64 hit images. Includes 8-16 bit grayscale display with window leveling and

Annotation - Includes Medical specific measuring and mark-up annotations like cross product, rules, protractor and point.

VECTOR IMAGING

Import/export - DWG, DXF, DWF, DMF, WHE, COM, DON, DRW, HIRGL/2, SVG, PICT and LEAD

Editing - 14 different primitive object types (Vertex, line, rectangle, pulytine, polygon, clipte, ordin, art., fixet, pie, chord, polydraw, and raster). Group objects into layers, copy or move objects between layers, lock individual layers. Add, edit, delete, rotate, translate and scale objects and layers. Convert points from world space to screen space and vice

Also includes 3-D viewing Eightling, shadow, camera), 3 vector engines (GDI, OpenGL and DirectX), convert or overlay vector drawings to

MULTIMEDIA IMAGING

Play, Edit and Save - Comprehensive support of multimedia formats - including AVI, ASP, WMV, WMA, MP3, WAV, MIDE, SNO, ASP, ASPC, MPEG-1,

Capture - Capture multimedia data from any DirectShow (WDM) Windows driver.

Video Codecs - HJPEG, HCHP and Wavelet. DirectShow Filters - Rotate, resize (bicubic and sple), brightness, contrast and more.

LEADTOOLS toolkite ship with sample so ide for Visual Basic, Visual C++, Visual C#, 3++, Delphi, and VB and Java script. And support for Visual Studio 6.0 database connectivity

(Oracle, SQL, OLE DB, ODBC, and JET)



PETERNI TO BITOK



sales@leadtools.com or call: 800-637-4699

1201 Greenwood Cliff, Suite 400 Charlotte, NC 28204



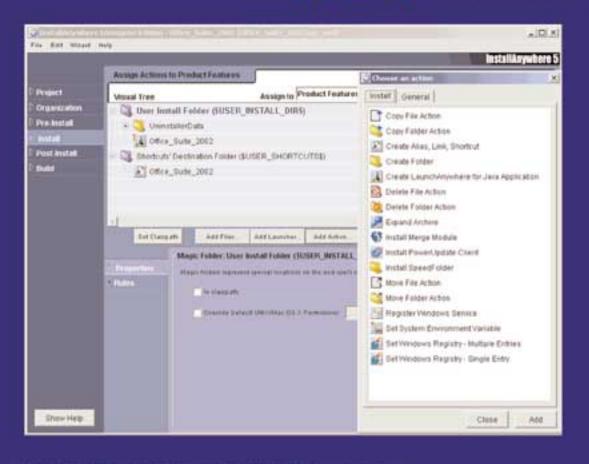
our installer tool

nstaller letting you down? Can't get your software out the door because those other multi-platform guys say that you need to take a seminar before you can even use their installer tool? Creating installers doesn't have to be difficult. InstallAnywhere makes it child's play to create masterful installers on the fly with our powerful, intuitive, task-based Advanced Designer.

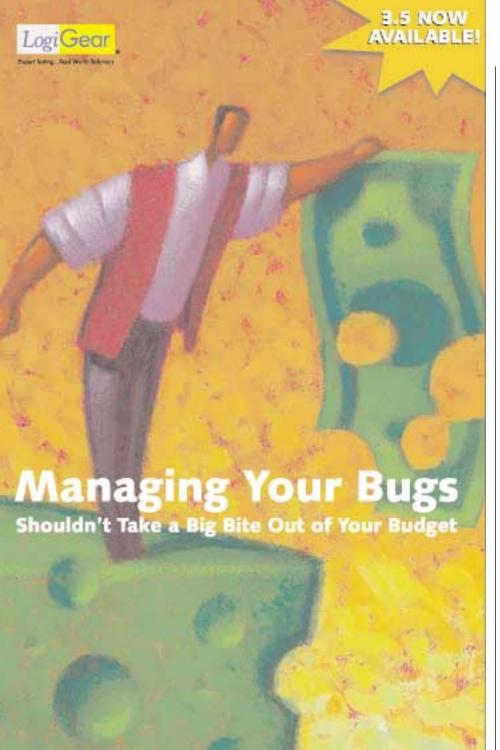
Our designer handles platform-specific actions intelligently, allowing you to focus on installer design, without worrying about how your installer will

function on different operating systems. And, we save you time and money by speeding you through your multi-platform deployment. We're faster than the competition—you can create a simple installer in just five minutes flat. And, we're better too—with more built-in functionality so you don't have to waste time writing tedious code to do the things that are built right into InstallAnywhere.

Pull the trigger. Download a FREE fully functional trial version today at www.ZeroG.com and see for yourself why InstallAnywhere is the world's most powerful multi-platform installer.







You don't have to be big to get big features. TRACKGEAR offers a complete set of powerful, flexible and easy-to-use features at the same low price to all businesses.

Enjoy custom workflow for every conceivable process with auto-routing, unlimited users with concurrent-user licensing, FREE beta tester or guest access, cross project management, customizable query tools and metrics, user-defined email notification rules, scheduled status report distribution, audit trails, Microsoft VSS integration, and more.

$\Delta(KG+A)$

BUG TRACKING FOR VALUE-CONSCIOUS BUSINESSES

For a FREE TRIAL, an online demo, or more information, go to www.logigear.com/trackgear/

Xerox to Transform XML With Circus

Claims new language handles structured, XML documents better than C, Java

CIRCUS TYPES

STRING/BYTE - Natively supports

16-bit Unicode and 8-bit byte strings,

REGULAR SEQUENCE - Defines

sequences of allowable values (inte-

gers, strings, etc.) with built-in type

READ-ONLY REFERENCE - Elimi-

nates potential for unwanted side

RECURSIVE - When combined with

records, references and regular

sequences, permits capture of XML

or HTML trees and modeling of graphs

Source: Xerox Corp.

and other complex structures.

checking appropriate for XML DTDs.

simplifies document manipulation.

BY EDWARD J. CORREIA

Xerox Corp. is previewing an early edition of Circus-DTE, a new programming language for developers building applications that access and transform XML and other types of structured documents.

According to Christer Fernstrom, area manager for contextual computing at the Xerox Research Center Europe in Grenoble, France, where the language was invented, Circus-DTE (data transformation environment) gives developers control over output that would be difficult to achieve with today's languages. "You could write the code in Java or C, but it would be very tedious. Circus gives you a specific, dedicated type control for

error detection," he explained. "For example, you can specify an integer between 20 and 40, and Circus will automatically detect consistency. There's no need for the programmer to insert statements to check that."

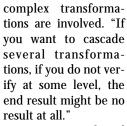
Circus introduces several new primitive and structured types and new ways to use others that Fernstrom claimed are better suited to text and structured document processing common with XML. "Many

Web sites today store their contents as XML, and then apply different transformations for users. Often those transformations involve many stages," which he said can include data extraction based

effects.

on personalized settings, user profile, device type or topic. "You can rely on Circus typing mechanisms to get guaranteed results. Your input [can be] validated against one DTD, output against XSLT fails to another, and Circus perform any can guarantee that data-type checkthe transformations are ing, says Xerox's performed correctly."

According to Circus inventor Jean-Yves Vion-Dury, a Xerox research scientist, Circus is unlike XML's transformation language, XSLT. "XSLT does not perform any type checking on your programs," he said, leaving the possibility to generate incorrect results, particularly when highly





Fernstrom explained Circus gives spethat while XSLT pro- cific type control grammers rely on for error detec-DTDs, or Document tion, says Xerox's Type Definition, for a Fernstrom. description of the doc-

ument structure, no hard links exist between the DTD, the language and the output. "The strength of Circus is the

coherence between

Fernstrom asserted that Circus is applicable to areas other than Web and XML development. "It applies well to document-intensive

the specification of the formats and the algorithms that you use for the extractions or transformations from one format to another. [There's a link] between the specification of the structures and the transformations of those structures."

industries, such as automotive, where they have complex documents they need to adapt and perform operations on. Another area is Web services, where you're not really working with documents but with structured data between services, as for supply-chain management, [in which] work is produced by one organization and needs to be understood by another, and where you might need to insert adapters that transform from one structure to another. It's important to get these transformations correct."

Circus also can be used in conjunction with XSLT. "Often we use Circus for the first stages of transformation, and then when things have more to do with layout, we use XSLT," he said.

Available now with a 90-day evaluation license, the Circus-DTE preview compiler, tutorial and sample code for Linux, Solaris and Windows can be downloaded at www.alphaave.com, a Web site from Xerox. The company gave no time line for general release. ■



Vion-Dury.

TOIL FREE 1-800-322-0333 EMAIL sales@logigear.com

Quietly, Microsoft Shelves Plans to Release Help 2

But vendor eHelp steps in with RoboHelp .NET, promises delivery of help 'standard'

BY ALAN ZEICHICK

Last month, Microsoft Corp. quietly let it be known that it was dropping its plans for Help 2, a new help file format and runtime facility that was expected to appear in early 2003. Help 2, the replacement for Microsoft's 5-year-old HTML Help 1.1, had been previewed by Microsoft for several years, and the runtime engine had been available since mid-2001 and was included with Visual Studio .NET.

The information was posted to a Microsoft Help newsgroup by Shane McRoberts, the company's lead program manager for its Help program.

"The Microsoft Help team has decided not to release Microsoft Help 2 as a general Help platform. This is primarily in response to customer feedback that the most important thing is providing a standard Help experience on everybody's machine," wrote McRoberts. "With that in

mind, we are focusing our work efforts on providing a great Help experience in the next client release of Windows (codename 'Longhorn') rather than on releasing an interim solution that is not integrated with the operating system." The Longhorn version of Windows is not expected to appear until the end of 2004, or later.

"While Microsoft develops future Help technologies, we encourage Help authors to continue using HTML Help 1.x," McRoberts continued. "The Help 2 engine will continue to be provided with several of Microsoft's developer-related products, including Visual Studio .NET."

Despite repeated requests, Microsoft was unable to make McRoberts or another member of the Help team available to explain the customer feedback, or the impact that closer integration with the Longhorn operating system release would have for users of other versions of Windows. However, eHelp Corp., which offers help tools, was quick to proclaim that it was working on a new "standard" to replace Help 2.

Mike Hamilton, product manager for eHelp's Robo-Help X3 help authoring system, said that Microsoft's move leaves developers in the lurch. "There are several known issues with HTML Help that Microsoft has never addressed. With Help 2 no longer on the horizon, people are upset that they've had to live with these HTML Help issues for so long."

In response, Hamilton said, eHelp (www.ehelp.com) will be developing new tools for Windows developers, plus its own advanced format. "Short term, there will be a new version of RoboHelp targeted at .NET developers, which will support not only the Windows Forms desktop applications and standard applications, but also Web services applications."

But more than extending RoboHelp, Hamilton said, "we have officially said that we will be releasing a new Help standard this year. With the demise of [Microsoft's] Help 2, it makes it a good time to bring something out. The goal is to provide cross-platform capability, but make it simpler and easier to deploy." The cross-platform issue, he stressed, was a problem even with Help 2: "What made us nervous about Help 2 was that it was a very good Microsoft solution, but it was a terrible solution for Mac or Unix environments.'

When asked if eHelp would be releasing its new format for general industry use, or working with Microsoft or other vendors to create a multivendor specification, Hamilton replied, "That is yet to be determined." But, he claimed, eHelp is talking with another company—which is not Microsoft—to collaborate on that format. He wouldn't name the company, provide a time line for the release of the new format, or even hint at the format's capabilities beyond the cross-platform support. "I'm trying to be careful not to damage those negotiations," Hamilton said.

As far as the short-term release, Hamilton said that RoboHelp .NET, which exposes help via Web services on a .NET-based server, should be generally available by mid-February. The new release, he said, would work with Microsoft's Visual Studio .NET and other .NET-compatible IDEs, and includes a runtime engine that uses the .NET Framework. "As long as [the IDE] uses all the rules of .NET, it should be fine," he said. Hamilton stressed that in addition to supporting eHelp's own help formats, RoboHelp .NET would continue to support Microsoft's HTML Help format. ■



And can it be ready in 4 months?



Tom (Group Mgr.): We have four months to implement an auto image-scan application to manage security in all of our offices world-wide.

Juan (Hrdw. Eng. Lead): The hardware's ready to go.

Dave (Dev.Team Leader): There's no way, Tom. We can't make that schedule. I have at least two and a half months of development time on the back end, nevermind the middle tier and the GUI work.

Tom: You have to have it ready, Dave. Do whatever it takes...

Tena (Dev.): Hey, I've got an idea...

Stand by to see how one simple idea can change the way you build software, forever!

Component Vendor Consortium www.components.org/yes 603-672-7880

Microsoft









A two-day Software Estimation: In-Depth Workshop
will be presented by Construx Software, March 4-5
at the Millennium Broadway Hotel, New York, NY.
Steve McConnell, CEO and Chief Software Engineer of
Construx Software, will teach you effective techniques for
estimating both large and small projects as well as presenting
numerous hard-to-find estimation
tips and pointers in a practical way.

Call 866.296.6300 or online at www.construx.com/training.

Macromedia Offers MSDN-Style Subscriptions

Borrowing a page from Microsoft Developer Network, Macromedia Inc. last week launched a software subscription service aimed at developers as a way, it

the latest technical information into their hands

Called Macromedia DevNet, the service gives developers access to Macromedia develnew Developer Resource Kits PHP language, according to (DRKs), the first of which, released in September 2002, featured a data grid that could be used in Flash applications and authentication and log-on

Tom Hale, senior vice president of business strategy.

"The model for this is MSDN," Hale said. "We decided our core value was the DRK, 12 to 18 months. We will ship a new CD every quarter with software components or extensions to [Macromedia's development suite] Studio MX."

The subscription service costs US\$1,599 with annual renewals at \$999; an Essentials level, comprising the Developer Resource Kits, but without server or development tools, costs \$299 annually, Hale said.

The company (www.macro media.com) also released an update to Studio MX, which now includes a full "MX" version of the Freehand multipage layout publishing solution and a new product, Macromedia Contribute, which is a clientside Web authoring tool. ■

For Oracle compatibility, XML Spy 5.3 now can directly load and save XML schemas from Oracle XML DB. It also can browse, open, edit and save XML documents in the Oracle database using the WebDAV protocol. WebDAV, or Web Distributed Authoring and Versioning, is an IETF extension to HTML for remote file manipulation.

According to Altova (www .altova.com), the new XML Spy also can automatically generate Web Services Description Language (WSDL) documents for a collection of Web services, and can generate content files in Adobe Portable Document Format (PDF) using XSL stylesheets.

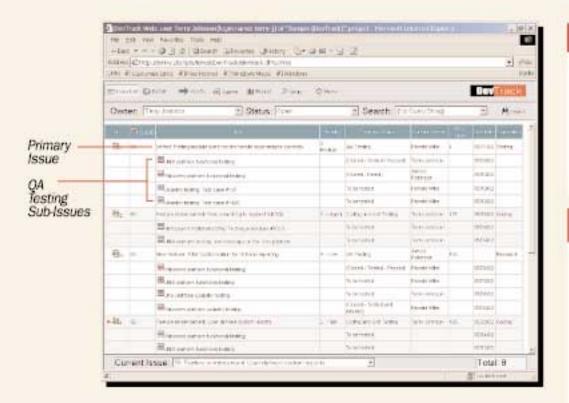
In addition, XML Spy 5.3 now ships with a Java API that allows it to be invoked or controlled from Java applications; previous versions of XML Spy included a COM component for integration with Windows applications.

A third-party tools provider, Hit Software Inc. (www.hitsw .com), has added support for XML Spy 5.3 to Allora, its relational data access tool, through a plug-in. Hit also has created new Allora plug-ins for Ixiasoft's TextML XML server, and for Oracle's JDeveloper Java IDE. Allora generates mappings between relational databases and XML documents, using an IDE and runtime application to dynamically convert the data bidirectionally. ■



Devirack 5.1

The Only Defect-tracker with a Beta Customer Portal



Beta Customer Portal

Make your Beta customers part of your QA team! Give them a secure, personalized web portal to submit, track, and update issues. Let them create & assign sub issues to direct comments to specific teams.

QA Test Plan Management

Automate your QA test plan management. When resolved issues or bugs enter the QA test state, new test events can be created and assigned to QA engineers automatically. When those events are complete, the issue or bug can be closed automatically.

Manage your development and defect-tracking processes.

- Configure workflow to match your software development life cycle.
- Issue & sub-issue automation: completion of one can trigger creation and assignment of another.
- Full-featured web interface for internal teams & Beta customers.
- Email submission & notification with an extensive list of triggers & recipients.
- Point-and-click query builder lets you search on any field.
- Total customization of GUI to fit your business.
- Role- and state-based access control at page and field levels.
- Numerous, customizable, presentation-quality reports.
- Fully integrates with MS Visual SourceSafe & Perforce.

See for yourself!
View a brief, pre-recorded demonstration on DevTrack 5.1's new features.



14 , NEWS , Software Development Times , February 15, 2003

www.sdtimes.com

News Briefs

MORE PRODUCTS

toolkit costs US\$499...Reliable Software LLC has updated its Code Co-Op version-control system. Version 4.0 now works with mobile users, and includes a visual diff utility. The software costs US\$159 per seat ... E-Tech Solutions Pvt. Ltd. is now offering Rapid Dotnet Migrator, a framework for moving software to Microsoft's .NET and BizTalk Server ... Sun Microsystems Inc. has delivered its Sun ONE Application Server 7 and Sun ONE Directory Server 5.1 on Linux, and promises to deliver its portal, identify, calendar and messaging servers on Linux by the end of 2003 ... The German firm ProSyst

ProSyst

Software AG has released OSGi plug-ins for Borland's JBuilder and IBM's Eclipse IDEs that allow them to work with Open Scalable Gateway Initiative-compliant embedded network applications . . . Version 1.2 of CrossOver Plugin, a Linux browser add-on from CodeWeavers Inc., now allows Linux developers to run ActiveX controls embedded in Web pages and HTML documents. The US\$24.95 package, which works with Mozilla, Netscape, Opera and others, also improves compatibility with Windows Media Player . . . A new tool from London tools provider Consonica Ltd. lets existing ASP Web applications run within Microsoft's ASP.NET. StateStitch, priced at US\$295 or €299 per server, allows ASP and ASP.NET applications to share session data, so that applications can be ported incrementally . . . Synergration Inc. is offering an ActiveX DLL, called CoreObjX, that provides programmatic access to

small-business accounting package in place of QuickBooks' own SDK. The royalty-free component costs US\$495 per developer seat . . . Micro Focus International Ltd. is now offering an HP-UX version of its **Server Express** COBOL compiler and development environment. It runs on both the PA-RISC and Itanium processors, and is source-compatible with Server Express for other versions of Unix . . . SoftIntegration Inc. has updated **Ch**, its C/C++ interpreter for scripting and graphics. Version 3.5 of the US\$99 utility adds command-line editing, as well as new scripting features for shell programming and numerical computing . . . Version 1.1.8 of **Wing**

Intuit's QuickBooks 2002 Professional



IDE, the Python development environment from Archaeopteryx Software Inc., enhances the debugger, making it easier to work with code that reloads Python modules at runtime. The US\$179 IDE runs on Linux, Mac

OS X, Unix and Windows . . . Etnus LLC has updated its **TotalView** C++ debugger to support IBM's 64-bit Power 4 Regatta servers, Sun's 64-bit architecture, and Linux-based Beowulf clusters. Version 6.0 also works with gcc 3.2 and version 7.0 of Intel's C++ and Fortran compilers for Linux.

PEOPLE

Altaworks Corp. has appointed **David Danielson** as its CEO. Danielson, who had served as CEO of Acuitive Inc., takes that role from **Stephen McCalmont**, who remains chairman . . . The Irish company Programming Research Group, which sells source-code analysis tools, is opening a U.S. office and has appointed **Robert Buckley** as CEO for American operations. Buckley previously worked at Eastman Kodak and Sun . . . **Jeff Tonkel** is the new president and CEO of Infravio Inc., which provides Web services management software. Most recently CEO of Envive Corp., Tonkel replaces **Eileen Richardson**, who left the company . . . Vitria Technology Inc. has hired **Gary Velasquez** as its president and COO. Velasquez, who served as a division president of Health Net Inc., also will serve as Vitria's CFO, replacing **Graham Smith**, who left the company in late January.

STANDARDS

OASIS has formed the **PKI Forum**, a technical committee to advance public-key infrastructure adoption for secure transactions. The group also has launched an effort to replace **Uniform Resource Identifiers** (URIs) with **Extensible Resource Identifiers** (XRIs). The new **XRI Technical Committee** also will develop a namespace for XRIs.

Borland Announces Earnings, Reshuffling

New business unit to focus on TogetherSoft product line

BY ALAN ZEICHICK

Borland Software Corp., flush from a solid earnings period that ended Jan. 31, has formed a business unit to accommodate its newly completed acquisition of TogetherSoft Corp., and has brought in George Paolini, a senior marketer formerly with Sun Microsystems Inc.

According to the company, Borland's 2002 revenues were US\$244.6 million, 10 percent higher than the previous year's revenues. This included \$4.4 million of revenue attributable to Starbase Corp., which Bor-

land acquired in November.

However, net earnings for the fourth quarter of 2002 were only half that of the same quarter a year earlier, falling from \$6.2 million in 2001 to \$3.1 million in 2002. Still, this represents 11 consecutive quarters of profitability for the company, which has a large cash reserve and no long-term debt, according to CEO Dale

At the end of January, Borland closed its acquisition of TogetherSoft, and formed a TogetherSoft Business Unit, to

be headed by Tony de la Lama, formerly general manager of the company's Java Business Unit

Replacing de la Lama as general manager of the Java team is Paolini, formerly Sun's vice president of software marketing. Paolini, who headed up Sun's Java Community Process from 1999 until 2001, resigned from Sun in June 2001 to become chief marketing officer of Zaplet Inc., a company that sells e-mail-based collaborative business process management tools. ■

OPTIMIZEIT

continued from page 1

director of product management in Borland's Java Business Unit, the new Optimizeit ServerTrace is designed for predeployment testing of J2EE applications, as well as for tracking down performance problems in the field.

"ServerTrace provides insight into where performance problems occur in J2EE systems," said Pataky. "If you think about traditional performance tools, like those from Mercury Interactive, they're really effective at putting a load on a system and measuring response time. But when you find out that the response time isn't what you need, you're out of luck. You have to send the whole application back to the engineering shop. That's a labor-intensive, and often politically intensive, discussion to have."

Pataky contrasted Server-Trace with the growing number of post-deployment "flight recorder" monitoring tools such as OC Systems' Root Cause and Performant's OptiBench, that are installed on production servers. Instead, he said, ServerTrace is designed for test teams to run themselves, in the QA lab, and provides reports that can identify performance problems. In fact, he said, Borland recommends that customers not deploy ServerTrace on production servers.

Beyond server-side performance profiling, the product includes a new code analyzer, which Pataky called the Automatic Application Quality Analyzer. He described it as a lint-like utility that provides a line-by-line semantic review of Java source code. "While the code may be syntactically correct, it may be semantically problematic, and cause performance or quality problems down the road."

What types of problems? "For example, say a piece of code is trying to serialize a nonserializable object," said Pataky. "It will work, but if you don't have a performance issue now, you may later. Or, you may be doing a read-only query on a database, but in the middle, for some reason, there's a write going out to the database. This might not show up as a perfor-

mance problem now, but when you scale the system, you don't want to be doing unnecessary writes to databases."

Optimizeit ServerTrace, which Pataky said will run with any major J2EE application server, is currently available for US\$20,000 for a dual-processor test server.

Separately, Borland announced that it has licensed Microsoft's .NET Framework software developer kit, and will be bundling it with its .NET languages. The SDK, which includes the Common Language Runtime, class libraries and other fundamentals required to build .NET applications, will be slipstreamed into the current version of Delphi, Borland's Object Pascal compiler and editor, and will be added to the next release of C++ Builder.

Although the .NET Framework SDK is available at no charge from Microsoft, developers previously acquired it by purchasing it as part of Visual Studio .NET, through their Microsoft Developer Network subscription, or as a 131MB download from http://msdn.microsoft.com.

MODELING

continued from page 1

tor of design and modeling solutions at Embarcadero (www .embarcadero.com), said Describe is tightly integrated with ER Studio, Embarcadero's data modeling tool. The bundling, he said, "broadens the scope of what modeling means to individual Java developers."

Keller sees the partnership as less a knee-jerk reaction by Sun than a validation of modeling. "If you look historically at the problems modeling had, there was a disassociation between the modeling tools and IDEs. With the progressive way of putting modeling inside the IDE, we want to remove friction. We're providing a breadcrumb trail of what you've built and how it integrates with the rest of the [enterprise]."

Sun ONE Studio and Describe come in a two-CD set, with Sun acting as a channel partner for the Embarcadero tool.

After the IDE is installed, the modeling tool will appear as a native piece of the IDE. Sun will ship a time-limited, full-featured evaluation copy of Describe, and if Sun ONE Studio customers decide to buy it, they will have to purchase Describe from Embarcadero. Sun ONE Studio 4, Enterprise Edition is priced at US\$1,995, while Describe for Sun ONE costs \$995 and is available now.



Optimize your infrastructure with HP.

Make your infrastructure work harder for you without building from scrotch. HP can help you aptimize your IT infrastructure with systems consolidation solutions that span servers, storage, software, and services to maximize your existing IT assets. Minimize total cost of ownership. Increase svallability and manageability – without adding complexity. And align IT resources with business objectives to produce higher ROI. From data center consolidation services and asset management and decision support tools to plug-and-play network fabric solutions and innovative utility financing models, HP provides comprehensive solutions to help you get more out of your infrastructure with the resources you have today. So leave the tough part to us. And sove yourself a lot of stress and strain.

For more information visit: www.hp.com/linux or call 888-hplinux



DreamFactory Envisions Rich-Client Interfaces

Start-up Web app development tool binds XML to UI, reducing bandwidth needs, latency

BY DAVID RUBINSTEIN

Claiming to introduce "the display component of the new Internet," Silicon Valley start-up DreamFactory Software Inc. this week is entering the burgeoning rich-client market with its DreamFactory Professional XML-based user interface authoring tool and Web application development platform.

"HTML is reaching its limits in this new world," argued Bill Appleton, president and chief scientist at DreamFactory (www .dreamfactory.com). "HTML was really set up to click a button, get a page. It works great for publishing. But new Web apps want to be aggregations of many things on a single screen."

The great thing about Web pages, Appleton continued, is the ability to link to another Web page from an open page. Before DreamFactory Professional, and the accompanying DreamFactory Studio client runtime, Appleton maintains, this linking of Web services could not be accomplished.



A portal built with DreamFactory Professional utilizes rich media.

Web services and standards are allowing this to happen, Appleton said, by making sophisticated services and business logic available in the middle tier. "It's a real sea change that's flipping client software on its head. Now, things authoring tools always have been good at can be hooked to

business logic, and the result is that it won't require deep system programmers."

The DreamFactory richclient model, Appleton explained, is similar to Macromedia's Flash in that it's a single file-format protocol that contains both content and executable commands, in this case using JavaScript. The content, downloaded by a standard HTTP server, is interpreted by the DreamFactory Studio browser plug-in for Netscape or Internet Explorer, running on either Macintosh or Windows. But where Flash is focused on graphics, Appleton said, "instead of animation, we do information." DreamFactory Studio also allows users to modify the presentation of the XML data during runtime.

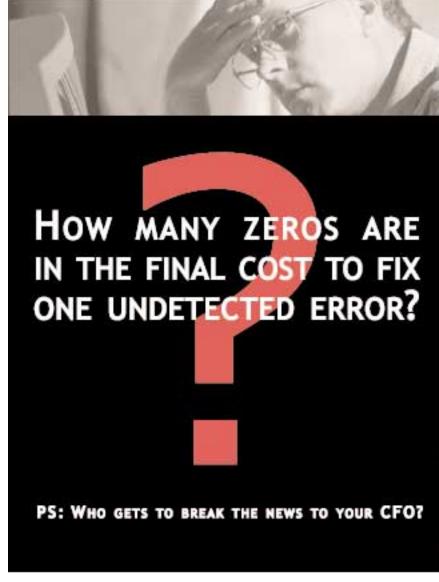
DreamFactory binds XML to rich-media user interfaces created by the development tool, and thereby greatly reduces bandwidth requirements and latency, Appleton claimed, adding that the program has no dedicated server component; it can integrate with XML servers anywhere directly from the client.

"XML is built into the ground floor of DreamFactory," he said. "It works like Java-Script, but you can look at arrays or objects or structures and they look like XML. The

XML is the data. What we have is really the first post-XML authoring solution" for interfaces; DreamFactory's UI building blocks include most types of styles of pop-up controls, such as buttons, dropdown lists and tool bars."

Appleton, who worked on development of the oncepopular SuperCard hypertext authoring system for Macintosh, and then for The Walt Disney Co. building user interfaces, said network topologies were defined by the arrows between nodes. Now, the labels on those arrows are not as important since they all are XML. "Now, the attention shifts to the nodes themselves," he said.

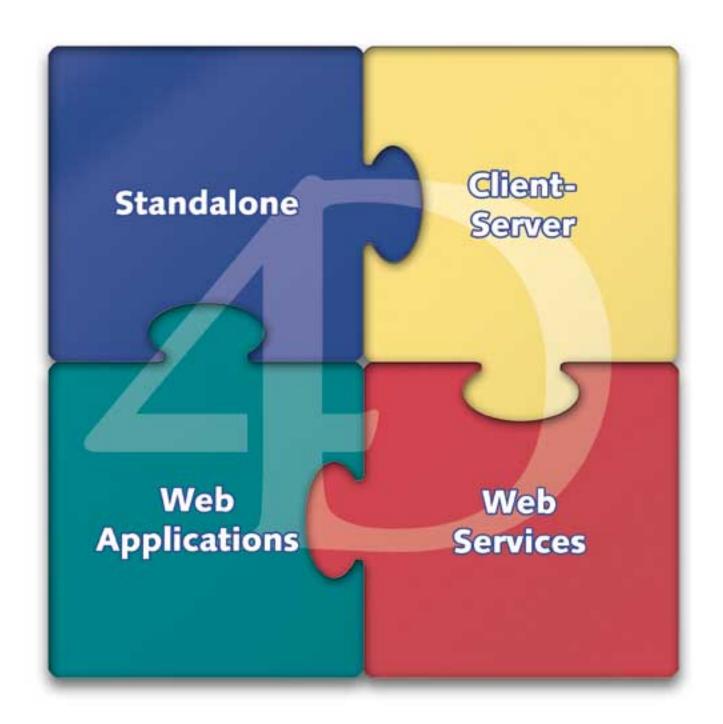
DreamFactory Professional, currently in beta, is being offered at no charge; the company will charge licensing fees of between US\$10 and \$40 per client for intranet applications. Internet deployment pricing details still are being worked out, he said.







4th Dimension 2003



Build applications for every Dimension.

www.4D.com/2003



tel: 888.THREADX (888.847.3239) fax: 858.613.6646

QNX Adds Layering to Neutrino API

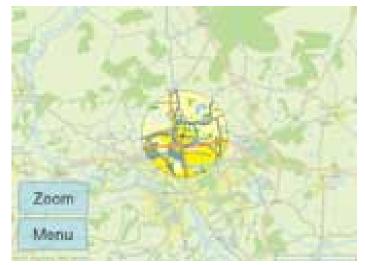
Expanded profiling tool looks at complete embedded systems

BY EDWARD J. CORREIA

QNX Software Systems Ltd. was scheduled last week to release an update to its Photon microGUI native windowing system for Neutrino that will support video compositing, giving developers the ability to present dynamic data from multiple applications in a single, multilayered display. The new API will be delivered with Momentics 6.2.1, the latest version of QNX's Eclipse-based C/C++ and Java development environment that also will reportedly include a new profiling tool.

According to Momentics product manager Steven Furr, the ability to overlay output from multiple applications is far from trivial. "The calculations for those might be radically different. For instance, [let's say] you have a math display that requires intensive calculation with an overlay on top of it. If you tried to render them both on the same display, every time you update one image you'd have to recalculate both images. Under normal circumstances you'd get a lot of interference."

Furr added, "Other RTOSes make you access the hardware



QNX's System Profiler, left, can graphically analyze the activities of a complete embedded system as it runs, helping to identify timing problems. At right, multilayering capability in the Photon microGUI API simplifies the composite display of dynamic data from individual or multiple applications.

directly yourself in order to take advantage of [compositing]." The alternative, he explained, would require the developer to partition one of the display planes away and render to it separately. "That means that you're not using the same API and you have to do a lot of the coding yourself."

Furr said the QNX (www .qnx.com) solution, which abstracts the hardware, enables developers to code in less time and with greater hardware efficiency. "With compositing, you can render the different planes independently and radically reduce your resource utilization. And the code is portable to other Photon-based applications or devices without knowing in advance what the display capabilities [of the target hardware] are."

Multilayered applications come into play in automotive navigation systems, military command and control systems, medical instrumentation, industrial

control and emergency response centers, according to Furr.

Momentics 6.2.1 also delivers System Profiler, a visual analysis and debugging tool that Furr claimed can give developers a view inside a running embedded system to determine where applications are spending time. "It shows you a trace of what's running at any given time—processes or threads—as well as all of the interactions between those components, and displays graphically where

anomalies appear. Developers can use this as a diagnostic tool to see potential sources of timing-related problems, problems related to the interactions between systems components, and to identify performance bottlenecks." The company's previous profiler looked only at individual applications.

Momentics 6.2.1 for QNX, Solaris and Windows was scheduled for release on Feb. 14; the new tools are free to existing Momentics subscribers. ■

CardSoft Claims Impenetrable Security

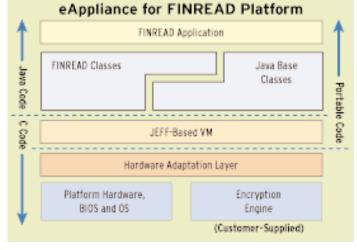
Smart card reader development kit based on FINREAD spec

BY EDWARD J. CORREIA

One way to prevent sensitive data from being intercepted as it traverses the Internet is never to send it at all. That's the thinking behind CardSoft Inc.'s eAppliance FINREAD Platform 1.1, the latest version of its smart card reader development platform that the company claims is the first to embrace the FINREAD 1.1 specifications for secure financial transactions using open networks.

The specifications were developed by a group of European communications companies, banks and other financial institutions known as the FINREAD Consortium (www .finread.com), as a means to reduce credit-card and online fraud, which by some estimates will reach €60 billion by 2005.

According to Don Sweet,



The self-contained FINREAD environment performs all encryption locally.

president and CEO of Card-Soft (www.cardsoft.com), FIN-READ is superior to public key infrastructure (PKI), SSL and other forms of encryption because private data never leaves the card reader. "It's a

much more secure algorithm because [data is] encrypted inside the device; it never touches the PC and never crosses the Internet. PKI and other protocols interact with the operating system; this does

not," which he said was one of the main requirements when developing the spec. "[FIN-READ] is its own little system and can't be corrupted."

The eAppliance FINREAD Platform, which includes a Java development environment and a 40KB JVM, is intended for developing secure-transaction capabilities into point-of-sale terminals, cell phones, set-top boxes and handheld computers. "It can be used in anything that requires an end-to-end solution talking to a secure server," he said, including transmittal of health records, Social Security numbers or any data susceptible to fraud.

Developers use the tools to build so-called Stiplets, which Sweet explained are tiny Java applications executing from a Flash card that act as the intermediary between the

smart card and secure backend servers. "Stiplets are the key to the whole thing. The credit card talks to the Stiplet, which talks to the secure server, gets authorization, captures data and tells the credit card the transaction is OK."

Sweet said that the creditcard apps can be built using standard JavaCard tools, and the back-end apps are generally running on secure servers developed by IBM Corp., VeriSign Inc. and others. Stiplets arose from the Small Terminal Interoperability Platform, an open specification developed by the STIP Consortium (www.stip.org) founded in 1998 by CardSoft, global services company Schlumberger Ltd. and Sun Microsystems Inc.

Available now, the eAppliance FINREAD Platform 1.1 includes STIP Java class files; a small-footprint, configurable JVM; and an IDE with remote debugger, and costs US\$75,000 plus \$2,000 per developer seat and per-device royalties. ■

JCP Expert Group Maps Future of J2ME-Based Devices

CLDC 1.0, MIDP 2.0 form basis of wireless device architecture; test suite due in June

BY EDWARD J. CORREIA

There's word from the Java Community Process that should come as welcome news for embedded developers. In late makers, telco carriers and Java developers working on JSR-185, the specification request designed to lay out the future

January, the 18 cell-phone of Java on wireless devices, turned out a road map intended to provide an overall wireless architecture and a consistent Java runtime environment

for devices around the world.

According to Nicholas Lorain, senior product manager for wireless Java technologies in Sun Microsystems Inc.'s Con-

sumer and Mobile Systems Group, the move will take much of the guesswork out of deploying Java apps to mobile phones. "This will provide a lot of visibility to application developers [about which] APIs they can expect to be widely available. They will be able to better plan their strategies around J2ME." All of the cell-phone makers in the group, including Motorola, Nokia, Samsung, Sony Ericsson and Vodaphone, have pledged to include the base set of APIs in a majority of their devices, he said.

The group will not develop any new APIs, but will focus on existing or imminent specs to establish a baseline for clientside Java app execution, Lorain said. Those specifications include the Connected Limited Device Configuration (CLDC) 1.0, Mobile Information Device Profile (MIDP) 2.0, the Wireless Media API, and, if the devices have multimedia capabilities exposed through Java APIs, the Mobile Media API. Further, devices with Javaexposed floating-point capabilities will require the forthcoming CLDC 1.1 (JSR-139), which will add FPU support and increased error-handling capabilities. CLDC 1.1 entered final draft phase in December of last year. MIDP 2.0, released last November, includes enhanced graphics, multimedia and messaging support for mobile devices.

The group also will compile a list of mobile phone-related JSRs in use internationally and specify which J2ME components it considers crucial to an end-to-end execution from a cell-phone environment.

"As long as people were deploying on CLDC and MIDP, everything was pretty simple," Lorain said. The group seeks to simplify development by clarifying which optional J2ME packages work best with which profiles, define how an interoperable end-to-end solution should work, and will describe a migration path for applications and profiles as devices become more powerful. Lorain said a reference implementation and compatibility kit should be available by June; devices conforming to JSR-185 should be available this fall. ■

We build software standards that work,

These days, you need software standards that work for you. Standards that don't hem you in. Standards that simplify interoperability. allowing you to integrate easily a variety of technologies. Standards that enhance the stability of your infrastructure, while reducing your total cost of ownership. Standards that help you meet the constantly changing needs of the enterprise, quickly and cost-effectively. Open standards, based on an open process.

Object Management Group and its members have delivered those standards for more than a decade. Thousands of enterprises around the world have leveraged OMG standards to create the interoperable enterprise applications that are shaping the way companies work and communicate. They've chosen OMG open standards for one simple reason: They work.

Model Driven Architecture" at work.

CMGs Model Driven Architecture (MDA*) provides a comprehensive interoperability architecture that embraces evolving standards and technologies. Based on well-established OMG standards, MDA accelerates development of new applications. simplifies integration with existing technology and reduces costs throughout the application

MDA is working for a large government system handling 30,000 database hits per minute, yielding cost savings of 65% for coding and 20% for the entire project.

Unified Modeling Language" at work.

OMGs Unified Modeling Language (UML") enables system architects to specify, visualize and document models of distributed software

and work, and work. and work. and work. and work. and work. and work, and work,

and work

systems to meet real-world business requirements. UML enhances application scalability, robustness, and security, while promoting efficient code re-use.

UML works for a major international airline, capturing user requirements, defining design, and generating documentation for a 3-tier flight-crew scheduling application written in Java, C++, and SQL by an international development team.

CORBA" at work.

Since its introduction in 1991, CORBA (Common Object Request Broker Architecture) has become the **€**CORBA middleware of choice for companies seeking an open, vendoe independent specification that enables beterogeneous systems and applications to work together over networks

CORBA works for a major medical benefits provider, linking databases on multiple platforms including some acquired companies, to service 47 million patients referred and paid by 10,000 different plan sponsors.

Who's working for you?

Why put your future in the hands of vendors with closed technology? Take control of your own software destiny. Join the 600plus companies participating in the open OMG consortium collaborating on the enterprise standards that are working to give them a competitive edge.

To learn more, or to join OMG, call us at (781) 444-0404 or visit us today at www.omg.org.

OWS, DAYS Lings, Model Driver Apriliance W.DA, MDA Lings, system Marketing Language: UNE, Lings, DD-68A and DD-68A Julys are trademarks or regiment of softwarks of Object Management (Frong. W., ar the Lines) Storm and other countries, Colorage & 2503 Storm Wanagement Group, Inc.



Software Development Times, February 15, 2003, EMBEDDED & WIRELESS NEWS

AppForge Now Targets Sony, Nokia

Embedded development tools maker AppForge Inc. has announced that Nokia and Sony Ericsson have agreed to include its Booster runtime on select Symbian OS-based devices, enabling enterprise developers using Visual Basic to extend their applications to the mobile devices as well as to similarly equipped devices running Palm OS, Pocket PC and Symbian OS from a single codebase.

According to Doug Benson, vice president of marketing at

Xilinx Unleashes **Multimedia Board**

BY EDWARD J. CORREIA

Xilinx Inc. late last month released Virtex-II Multimedia, an addition to its line of reconfigurable device-prototyping boards based on its Virtex-II field-programmable gate array with support for five banks of 36-bit zero-bus turnaround (ZBT) high-speed RAM.

According to the company (www.xilinx.com), the board is well suited for prototyping video-intensive applications, including satellite up/down link systems, digital video recording and processing devices, and high-end set-top boxes.

Steve Sharp, senior manager of programmable logic solutions, said the advantage of an FPGAbased board is its flexibility. "It lets you try out different ideas until you get to a final product." He said that by programming the target into different iterations, developers can determine whether functions work better in hardware or software, and identify performance trade-offs.

Although its customers are mainly OEMs, the device has several enterprise applications, Sharp said, which could include set-top box development for hotel-based video-on-demand systems. "[Hotels] can't use an off-the-shelf box, because they would want to tailor what goes on inside the box. They will also have to figure out how to disseminate videos to the rooms and bill for it."

The Virtex-II Multimedia board costs US\$1,400, including power supply, cables and an evaluation version of Xilinx's ISE 5.1 GNU-based C development environment; after 60 days, the software costs \$695 per seat. ■

AppForge (www.appforge.com), which develops and markets the MobileVB extension to Microsoft's Visual Basic 6.0, the significance of the Nokia and Sony Ericsson deals goes beyond the convenience of a preinstalled

runtime. "We bring the entire value proposition of Microsoft its developers and licenseeswithout them having to pay them a single dime [in royalties to Microsoft]. Now those developers can write with .NET and

Compact Framework, and can target not only SmartPhone, but all these other devices too.'

Benson said that Sony's P800 mobile device will be its first to include an AppForge runtime;

Nokia's Series 60 phone will be Nokia's first. He also said that several runtime agreements with other vendors are expected in the next few months but declined to mention specific vendors. MobileVB pricing starts at US\$899 per developer seat; applicable runtime royalties vary by volume and platform.

SIZE IS IMPORTANT.

Embedding a database in an application presents a number of design considerations to the developer: the size of the database database performance; reliability and maintenance costs; and finally the database's feature set. Birdstep has simplified the approach of managing complex data for developers of C, C++, Java and XML applications and provides the optimal balance of size, speed, functionality, and reliability. Discover why customers like Bloomberg, HP. Johnson and Johnson, 3Com, and Cognos have chosen to use Birdstep's database engines for their transaction processing and auto-recovery applications.

- Small Footprint < 256Kb
- High Performance Lightening fast and always-on reliability, critical in embedded and real-time applications
- Flexible Choose from relational, network, object-oriented, or XML database models
- Zero Maintenance Designed to run in mission critical applications
- Cross Platform Support Platform support for AIX, HP-UX, Linux, Neutrino, Palm, Solaris, UnixWare, VxWorks, Windows CE and Windows 32

ULTRA FAST

EXTREMELY MOBILE

FLEXIBLE

SMALL FOOTPRINT 6-255Kbb

NONE OF THE ABOVE





For an entire list of specs and to download a free evaluation visit: w.w.w.birdstep.com. To talk to a sales representative please call: 1 877 462 2473



Looking for the missing component in your Web applications?





Call 801-852-0880 to schedule a demo or visit online at www.vultus.com

It's right here. WebFace" by Vultus.

No more need for Web conformity. No more browser plug-in dependency. Your Web applications can now deliver a familiar windows-rich user experience with the ease of an Internet browser. And it all happens simply and consistently across any Web environment.

The front end or "face" of our WebFace Solutions Suite makes your applications more consumable, eliminates the challenge of traditional Web application delivery, and allows application deployment to happen faster and more predictably.

Come see the new face of Web services. You won't be disappointed.

Software Development Times February 15, 2003 | SPECIAL REPORT | 23

Driving Web Services

Data integration, application componentization are the moving force within organizations

BY ANDREW BINSTOCK

espite considerable hype during the past two years, Web services have managed to establish themselves as a useful solution at many IT sites. The rate of adoption certainly has not been as rapid as first expected; however, given the current economic climate—especially in IT spending—this slower acceptance is still a real achievement. The drivers for this acceptance are: Web services are simple to understand and implement, they're not expensive, and they enable solutions that would otherwise be difficult to assemble. This report discusses where and how Web services are being used and what obstacles stand in the way of their growth.

According to a survey performed by Evans Data Corp. in late 2002, 36 percent of corporate developers in North America were working on Web services, while 25 percent of all developers have actually deployed Web services. This might come as a bit of a surprise since deployed Web services have been nearly invisible. In addition, many vendors of development tools for Web services suffered through a dismal year. So where are all these deployed services?

Publicly accessible Web services sometimes referred to as federated services-have barely been deployed anywhere. Only a few large companies have rolled out public services: Amazon.com, Federal Express, Google, IBM, Microsoft and UPS. While applications such as Amazon's use of Web ser-

vices to provide partners with the ability to search for specific books appear straightforward, many companies have been slow to create such simple applications. Their hesitation stems from an unwillingness to invest in technology for which demand is still light, concerns about security issues involved in granting public access to IT systems, and reluctance to spend IT dollars on new projects in a time when budgets are so tight.

As a result, most Web services have been deployed on corporate intranets. There, specific need can be established, security concerns contained, and the costs of deployment accepted. Web services have been rolled out on intranets for two primary purposes: data integration and componentization of applications.

DATA IS A DRIVER

Data integration and aggregation is the primary reason behind Web services today, said Nars Krishnamachari, director of technology for Razorfish Inc., a Massachusetts-based IT consulting firm. "For

companies that need to aggregate data within the enterprise, Web services and XML are an inexpensive and not terribly complex solution for getting data from disparate systems and normalizing it."

At SD Times' Web Services Development Conference in October of last year, it was clear that attendees were exploring Web services for just this kind of data integration, with an eye toward wider use if the pilot projects were successful.

At this stage, this data integration is still straightforward. More complex EAI, complete with transaction capabilities, probably will not happen soon, according to Krishnamachari, because the semantics of this are far from being ironed out, both at the Web services layer (as the integration mechanism) and at the semantic level.

In addition, companies that already rely on EAI and business-to-business integration tools generally have a lot invested in this infrastructure—and it generally works pretty well. No more compelling example of this exists than the

continued widespread reliance on Electronic Data Interchange (EDI), which was originally seen as the technology most likely to be washed away by the flood of Web services.

PIECES OF THE PUZZLE

During the past 10 years, companies have been searching for effective ways to reuse existing code. For much of that time, initiatives such as object-oriented programming (OOP) have provided partial solutions that were constrained by low granularity: Being able to reuse individual objects or classes was hardly the big breakthrough companies needed. Rather, companies needed a way to reuse complex services across multiple applications. For example, insurance companies use business rules to qualify applicants. These rules frequently are hard-coded inside the principal underwriting application as hundreds of pages of if-else statements. There, they are occasionally tweaked and maintained by guru-level programmers. The difficulty arises if the company wants to requalify its existing insureds, for example. Because the rules are locked in an application that performs other functions and generates other results, reusing the rules for another purpose is practically impossible.

However, if the rules are extracted and wrapped in a Web service, they can be used both by the original application and by any other software that would benefit from running qualification tests. Likewise, the actuarial logic that determines insurance rates could be wrapped as a Web service and used in conjunction with the qualification rules to construct what-if scenarios for devising new lines of coverage.

These examples illustrate the kind of

TOOLS FOR WEB SERVICES

The market today offers a wide variety of tools that take care of the programming overhead for developing Web services. These tools convincingly remove a tedious chore from the developer's task list, but they don't do much in helping formulate the proper design of Web services. Even a tool such as BEA's WebLogic Workshop, which is one of the most advanced design tools, simply allows developers to represent pictorially what functions they need, from which it generates the code and wrappers.

While undeniably helpful, it does not operate at a sufficiently high level to enable the intelligent encapsulation of Web services. For example, consider the question of granularity.

At what level should requests be made of a Web service? Suppose a Web service accepts a Social Security number and returns financial data about an applicant for a credit card. What data should it return?

If it returns a person's entire credit report, it will undoubtedly generate too much traffic and consume excess resources marshaling and converting information that the original requestor does not need. If the service returns too little information, then the originator will undoubtedly issue follow-up requests for data, which equally tie up resources.

Ideally, the granularity of the data would match the requestor's need perfectly—the service delivers all the data with nothing extra in a single request-reply cycle.

Designing a Web service to do this, though, can be difficult if the service is set up to handle different kinds of requests from multiple clients. Resolution may depend on advances in technologies such as UML to make graphical representations of Web services and application needs, so that this information can be captured in design documents. -Andrew Binstock

► continued on page 25

Fiorano vs. IBM and BEA

Integration Middleware

Features	IBM	BEA	Fiorano
Dynamically Change Business Processes	0	0	A
Compose Applications With Coarse-Grained Components	0	0	A
Selectively Deploy/Configure Services Across the Network	0	0	3
Debug Multiple Services Remotely	0	0	3
Use Multiple Languages and Scripts for Service Development	0	0	3
Scale Smoothly with a Super-Peer Architecture	0	0	A
Optimize business processes by exploiting data-parallelism	0	0	A
Support Component Reusability and Team Development	0	0	A
Benefit from a Low Total Cost of Ownership	0	0	3/

Fiorano is #1 in Standards based integration



Download Free Evaluation Software Today, at www.fiorano.com

WEB SERVICES

robust high-level componentization that Web services will increasingly provide. In fact, ILOG Inc., a vendor of advanced components, is expecting to ship a Web services-enabled version of its JRules product to cater to precisely this kind of scenario. Henry Bowers, rules product manager at ILOG, said, "As this use of Web services to componentize business services becomes more widespread, companies will be able to mix and match these large components from various sources and bolt together complex highquality applications in record time.'

And what is particularly compelling about this scenario is that it does not require the use of standards beyond the "four horsemen" (XML, SOAP, WSDL and UDDI) currently employed in Web services. That is to say, this kind of component-level integration is simple to write and does not require advanced coding skills or significant investment to implement.

SO, WHERE TO DEPLOY?

With most projections suggesting that Web services will indeed become an integral part of the computing infrastructure during the next two to three years, many analysts are suggesting that IT sites get on board soon. Sites that begin working on pilot projects will rec-

DASHBOARDS AND PORTALS

and portals. Dashboards are used by companies to graphically display metrics derived from a company's operations. For example, a firm might create a dashboard available to the manager of shipping that would show (using gauges and similar widgets) the number of orders processed, the number of orders returned, the average time orders spent in shipping, the inventory level of shipping supplies and so forth. At a glance, the supervisor can see how well operations are performing.

Web services are a natural solution for this kind of product. They can be placed as front ends to a variety of servers and then polled for the latest data, which is returned in XML and displayed on the dashboard. The fact that the servers may use very different data formats and different APIs for accessing the data can be resolved by the loose coupling that Web services uniquely provide.

Companies such as Novato, Calif.-based Corporate Radar, a vendor of business intelligence software, use Web services in just this way. According to the firm's vice president of sales, John Seratt, "We use Web services to present data generated by our database analysis software on the dashboards; then we give users the option of customizing their dashboards by integrating publicly accessible Web services that might be of interest to them."

Portals are a natural extension of this idea. Through Web services, portals can theoretically access a much larger number of data sources and thereby provide a much richer client experience. While analysts such as Bob Bickel, of Bickel Advisory Services, maintain that portals are a natural fit for Web services, they also view current implementations as just the beginning.

Evolving standards will lead the way, Bickel contends, to more elaborate offerings. "Java's JSR-168 is one effort to help standardize how portlets interact with portals. This and other standards will help normalize how Web services are aggregated on portals. Chances are that portals will daisy-chain Web services in a series of functions that ultimately bring considerable value to the client."

Among the emerging standards for this integration is Web Services for Remote Portals (WSRP), which is under the aegis of OASIS (www.oasis-open.org). -Andrew Binstock

ognize new uses for Web services in contexts where security and redundancy can be comfortably assured. Then, according to Bob Bickel, former Bluestone Software Inc. vice president and founder of Bickel Advisory Services, they should undertake simple, publicly exposed services. These might include ways in which customers and clients might download an entire product catalog. "You can even create a small clientside app that you give to your customers,

partners, clients as freeware; then have it download your catalog and other inventory data you're comfortable making public," he said.

"With Microsoft Office 11 using XML and with .NET becoming established," Bickel continued, "the clientside front end to your Web service might very well be one of your templates running on Microsoft Excel or Word. This configuration provides a familiar setting in which your customers can immediately apply the data they obtain through your publicly exposed Web services."

For sites that are not quite ready to go this far, analysts recommend starting with the four basic protocols to provide dashboards on intranets. These can be simple tools that allow managers to monitor the status of business systems and operations. This is a great place to start. From there, the componentization of in-house apps to leverage key existing software modules is a logical next step.

Numerous Challenges Still Stand in the Way

BY ANDREW BINSTOCK

Today, Web services are primarily deployed on J2EE platforms. All major Java app servers offer some form of support for Web services. J2EE's most significant competitor is Microsoft's .NET. Even though .NET has been shipping for only a few months, programmers are clearly interested in testing it for Web services deployment. In its 2002 survey of developers, Evans Data Corp. found that the number of developers using Java APIs for Web services and the number using .NET were about even.

In theory, however, the platform hosting the Web services should make no difference at all. And to the extent that this is true today, it is because the key vendors of platforms and tools have provided sufficiently uniform implementations of XML, SOAP, WSDL and UDDI. And because the transport layer for Web services is typically HTTP, the bedrock of Web services effectively is plug-and-play.

Indeed, Web services could just as easily run over other transports such as Java Message Service (JMS) or messaging middleware. For some sites, these alternatives may represent a solution to performance and security concerns.

Beyond the plug-and-play dimensions and the simplicity of the protocols lie a host of challenges that exponents of Web services have to resolve before widespread adoption can become a reality.

SECURITY

Because Web services are a porthole into a company's computing infrastructure, they represent opportunities for malicious hackers to wreak havoc. Today, most publicly accessible Web services sidestep the problem by offering no more functionality than what is already available to the public through the companies' Web sites. Those Web services, such as those from Google, Amazon.com and UPS, merely automate the Web access through programmatic means.

Because of the security issue, most sites are focusing on deploying Web services behind the firewall. Even there, issues such as access control endure. Modification to live data via Web services is not widespread, even behind firewalls.

AVAILABILITY

The scenario turning a rules engine into components for use by multiple applica-

► continued on page 27

Centralize, Automate & Streamline Issue Tracking Processes.

Tenrox Incident Management System gives you the power to track bugs, change requests, customizations and issues in real-time using Web-based workflows.

- Eliminates communication via email & spreadsheets
- Prevents repetitive work: gain 2 hours per week per resource
- Real-time statistical reporting at your fingertips
- Integrates with Tenrox enterprise time-tracking system

Incident Management System ... I was thrilled to see a product so configurable and easy to

> Charles C. Howe, PM Network Magazine

"Tenrox incident Management is ideal for companies that need to centralize their project systems with minimal expenditure..., the software has minimal requirements, workflows and approvals Aniel Sukhram,

For an online demo, contact us at: www.tenrox.com/sdtimes info@tenrox.com 1-877-4TENROX (1-877-483-6769)



Connect your existing Windows Applications to Web Services

NetEdge's Web Service Enabler

- Connect your Visual Basic 6
 application to XML Web Services.
- Consume Web services written with Java, C++, VB.NET, or C#.
- Access data from a Web Service hosted by Oracle's AppServer,
 IBM's WebSphere, BEA's WebLogic or Microsoft .NET Servers.
- Reuse and extend existing business logic and client code.
- No .NET Runtime on the client PC.



Download a FREE Trial Today!

tel: 919.462.4294 info@netedgesoftware.com

www.netedgesoftware.com

Web Services Standards: Maturing or Fracturing?

BY STEVEN J. VAUGHAN-NICHOLS

You can't blame older Web developers if they are overwhelmed when considering all the new Web services standards on their way. For example, in mid-December 2002, BEA, IBM, Microsoft, RSA, SAP and VeriSign announced a new set of specifications on top of WS-Security: WS-Policy, WS-Trust and WS-Secure-Conversation. Next, in January, Fujitsu, Hitachi, NEC, Oracle, Sonic and Sun announced WS-Reliability to try to bring rhyme and reason to Web services' transport infrastructure.

You may have noticed, as has Jason Bloomberg, senior analyst for Web services and XML analysis firm ZapThink, that "they're entirely different groups

with no overlap." But fear not for standards wars, because Bloomberg thinks that while corporate politics are, as always, playing a role, the real reason that two different

groups of companies produced these standards prototypes is that the Web services software vendors are splitting up the work among them.

Bloomberg said, "IBM, for example, was working on reliability, but they're happy for Sun to do the heavy lifting. And as for the new WS-Security initiative, pretty much all the WS vendors are supporting it." Indeed, he explained, "the idea behind both group's organization is that for the sake of efficiency, it's easier for small groups of companies to hammer a standard out and then let the WS community review and comment on it. Then, after a review period, both will probably be released as draft standards."

Specifically, he expects both to go to the Organization for the Advancement of Structured Information Standards (OASIS) or possibly the World Wide Web Consortium (W3C) to become industrywide standards.

As for the Web Services Interoperability Organization (WS-I), Bloomberg commented, "The WS-I's job is to take existing standards and make sure that they are applicable. Standards by themselves do no one any good; it's only when people use them that they are effective. The WS-I comes up with profiles, which say this version of WS-Security will work together if you follow these rules of implementations."

SECURITY STANDARDS

WS-Security, hammered out by IBM Corp. and Microsoft Corp. in April 2002, is to provide message authentication, confidentiality and integrity functions for

Web services using security tokens, digital signatures and encryption.

With the December announcement, IBM and its colleagues are stating how you would use WS-Security in enterprise applications. In particular, WS-Policy defines application policy requirements for authentication, trust and encoding. It doesn't go into the fine detail of whether one should use Liberty Alliance or Passport for authentication. The same is true of WS-Trust, which handles remote site trust and authentication issues, and WS-Secure-Conversation, which deals with how to set up secure messaging sessions.

But, as Bloomberg noted, these aren't standards yet. For now, these are far

more important to development software vendors than to developers in the field.

Eric Ogren, senior analyst for The Yankee Group, agreed, saying, "The Web services

security world in 2003 is more hype than reality, and we do not expect customer deployments to trickle out until late 2004. Although it is still too early to determine the rate at which commercial enterprises will adopt WS-Security, it is clear that IBM, Microsoft and the major security infrastructure vendors are writing the Web services agenda."

As Ogren also noted, however, the companies are promoting "their united vision of a Web services world that is dependent upon their core technologies. The release of the WS-Security specifications puts these vendors on the inside rail."

Ogren, unlike Bloomberg, does see the lack of support for WS-Security specifications by other major Web services players, such as Hewlett-Packard and Oracle, as placing those vendors "a length behind," rather than as just a matter of different industry groups working on their own piece of the WS standards puzzle.

For WS-Security to come together, Ogren thinks that the consortium behind it must "build end-user Web services applications showcasing the benefits of WS-Security," submit the WS specifications to OASIS and W3C sooner rather than later, and create a broader alliance of major enterprises and enterprise application vendors to support WS-Security.

The IT vendors behind WS-Reliability are saying that this royalty-free specification will promote open, reliable WS messaging standards. In par-

► continued on page 27

Software Development Times , February 15, 2003 , SPECIAL REPORT , 27 www.sdtimes.com

ticular, it's designed to include asynchronous messaging, guaranteed delivery, duplicate message elimination and message ordering.

All of this will be done by adding extensions to the Simple Object Access Protocol (SOAP) headers and body, rather than tying it to the underlying transport protocol. While Web services can be used over almost any transport protocol, WS-Reliability presumes that HTTP will be used.

Don Deutsch, vice president of standards strategy and architecture for Oracle Corp., said, "Open standards-based

tions introduces a wider problem. In that setup, portions of a department's

application could exist on servers that

are not under its control. Hence, if a

needed Web service is located on a serv-

er that is out of commission, how would

an application continue running? One

solution, undoubtedly, is redundancy. If

a server is down, the Web service auto-

matically rolls over to a second server.

However, the details of this process

CHALLENGES

reliability is essential for Web services to meet real-world business needs," and that "WS-Reliability is an important step in defining a solid infrastructure for Web services. But, the specification (www .sonicsoftware.com/docs/ws_reliability .pdf) doesn't address all aspects of reliable messaging."

What it does do is build on previous work with SOAP and the ebXML Message Service. Eventually, the group hopes that WS-Reliability will be incorporated into SOAP 1.2.

Some developers are concerned, though, that since guaranteed delivery requires an acknowledge (ACK) message from a SOAP node for every successfully received SOAP message, over-

The problem is more complex than just the rollover. For example, how does a requesting application know whether a Web service is unavailable? It can ping the initial service and receive an acknowledgment, but if that service relies on a chain of other services, one of which is down, it's not clear how this event would be recognized, nor how to resolve the state issues of the dependent services in the chain. Within the of substantial deployments, there is still enterprise, of course, monitoring softlittle data as to the scalability and perware can provide additional information formance under heavy loads. about a server or a device. On remote, loosely coupled systems, this will fre-

IT'S A MATTER OF TRUST

WS-Policy	Application policy requirements for authentication, trust and encoding.	
WS-Trust	Defines application policy for trusting remote sites, accepting security tokens and delegating authentication.	
WS-SecureConversation	Defines how application negotiation to establish secure messaging sessions will be handled by authentication, key exchanges and communications encryption.	
WS-Reliability	Establishes ways to guarantee message ordering, message delivery and the removal of duplicate messages.	

all Web services throughput may be slowed down.

Exact details on how WS-Reliability would work are still up in the air. For example, it defines elements and attrib-

operability through the use of numerous data wrappers. Consider that a simple Web service request requires WSDL, then processing of the SOAP envelope on both ends, XML parsing, and the conversion of XML to the internal format used at the endpoints. As a result, Web services are noticeably slower than their nondistributed, non-XML counterparts. Moreover, for lack

Some of the processing overhead will diminish as enterprises store more of their data in XML, but this transition is happening slowly.

utes that might also be used by routing or security. The group agrees that such elements shouldn't be duplicated across multiple SOAP headers, but no way has been defined, as of yet, on how such elements should be handled.

Clearly, industry consortia are working to make widespread Web services deployments enterprise-ready. Whether these groups are competing with each other or simply working on different parts of the WS puzzle is an open question. The lack of a clear path for these proposals to move to standards also troubles some developers.

What it also points out, though, as The Yankee Group observes, is that the commercial adoption of Web services is still years away. Yes, WS applications can be built today, but making them secure and reliable enough for enterprise use

need to be worked out carefully, and as yet no systematized method has been quently not be possible. over extranets and the Internet is still, at established. Web services provide universal interthe least, months and standards away. Technology in your Hands MORGAN KAUFMANN PUBLISHERS VISIT US WWW.MKP.COM ON THE INTERNET JAVA: PRACTICAL GUIDE FOR Ordering Information: PROGRAMMERS DATA QUALITY: BY MICHAEL SIKORA THE ACCURACY DIMENSION MANAGEMENT: TECHNIQUES FOR BUILDING CORPORATE MEMORIES Elsevier Science BY JACK E. OLSON Order Fultillment Department IIY IAN WATSON 11830 Westline Drive St. Louis, MO 63146 (800) 545-2522 / (314) 453-7010 [Intl.] 800) 535-9935 / (314) 453-7095 [Intl.] Email: MAINTAINING AND EVOLVING SUCCESSFUL COMMERCIAL WEB custserv.mkp@elsevier.com BUSINESS PROCESS CHANGE: A MANAGER'S GUIDE TO IMPROVING, REDESIGNING, AND AUTOMATING PROCESSES SITES: MANAGING CHANGE, CONTENT, DESIGNING DATA-INTENSIVE WEB APPLICATIONS SITE MEASUREMENT For bulk discounts: FRATERNALI, ALDO BONGIO, RICO BRAMBILLA, SARA COMAL AND MARISTELLA MATERA BY ASHLEY FRIEDLEIN c pascual@elsevier.com BY PAUL HARMON

EDITORIALS

Slamming SQL, Sports

any software developers think about Internet traffic \mathbf{IVI} levels only when their home DSL connection slows down. Given the increased prevalence of Web-based enterprise applications, however, the entire IT department—and not just the networking staff—needs to be aware of the external vulnerabilities inherent in relying upon the Internet for critical business applications, as well as customer/partner service delivery.

In late January, two events demonstrated the global network's vulnerabilities. First, a new worm, called SQL Slammer, was unleashed. Programmed to attack systems running Microsoft's SQL Server 2000, the worm's continual transmission of 376-byte packets had the effect of hitting much of the Internet with a distributed denial-of-service attack. The traffic flood affected sites as diverse as Bank of America, Korea Telecom Freetel, the U.S. Department of State and Continental Airlines. The result: Even if your network wasn't directly affected or attacked by the worm, you and your customers experienced a general slowdown of Internet traffic.

The second event was Super Bowl XXXVII, the final game of the American football season. While Florida's Tampa Bay Buccaneers were trouncing California's Oakland Raiders, football fans were pounding the official Web site and those of its high-profile advertisers. The congestion was so intense that Omniture Inc., a Web analytics firm, estimated that general Web traffic fell by 22 percent during the second half of the game. Meanwhile, advertisers such as Universal Pictures and Cadillac saw their Web site performance slow to a crawl, according to Keynote Systems Inc., with site availability dropping from 100 percent to 83 percent. (The other 17 percent timed out.)

While attacks by worms and other malicious programs are unavoidable, enterprise Web applications must be resilient enough to survive, even if service is temporarily lost or impaired. And when it comes to public Web sites, the only solution is to test, test, test, to ensure that the servers, middleware and infrastructure can support the expected load.

Web Services: Beyond the Hype

Few software development technologies have been promoted as widely as VMT 1 promoted as widely as XML-based Web services, initially hyped as a way of reusing software as a rentable service, and then wisely repositioned as an integration technology. Some estimates are that as many as 36 percent of all corporate developers are working on Web services—and that 25 percent have actually deployed them.

That doesn't mean that Web services are ready for widespread deployment, despite what the leading platform providers claim. Concerns about security, availability and interoperability remain. While vendors are busy developing specifications for addressing these issues, such as the new WS-Policy, WS-Trust, WS-SecureConversation and WS-Reliability, the mere presence of specifications doesn't translate into a deployable solution.

A wise strategy, for now, would be to stick with Web services projects that leverage the four core Web services standards—XML, SOAP, WSDL and UDDI—and wait for these new specifications to mature under the auspices of genuine standards bodies, not vendor consortia.

GUEST VIEW

THE BENEFITS OF ACCESSIBLE DESIGN

s a Web designer, I've seen a Alot of changes in the past few years on the Internet. A standardization has developed for what a Web site is expected to have and what it shouldn't have. However, part of my job is not only to design pages that meet the current standard, but

to look ahead and try to see what standards may be developing. I think the next big change we'll see in Web design will center around building sites for accessibility.

Right now only feder-MARY al agencies are required **ELGES** to design their sites to meet accessibility guidelines, under the Rehabilitation Act of 1973. Section 508 of this act, which passed in 1998, mandated that all federal sites had to be accessible to all people. Can the day be far behind when the rest of us are required to do the

While it may seem like a daunting task, redesigning your site for accessibility makes it better. It doesn't only help visitors who have physical, sensory, cognitive or work-related constraints. Users with older hardware, older browsers or text browsers, or those who have their computers set to view textonly to improve Internet download time also benefit. The site's information is faster to find and the site is more appealing.

The World Wide Web Consortium (W3C) has put forth a list of suggestions for Web designers to follow to fully optimize sites for accessibility:

Guideline 1: Provide Equiv-



done using alt tags on all images. Since the alt tag contains text, it can be accessible to user agents, such as synthesized speech, Braille and visually displayed text. The benefit is that adding alt tags also helps with searchengine optimization.

Guideline 2: Don't Rely on Color Alone. Pages need to have sufficient contrasting colors so that users with monochrome, black-and-white displays, and people with color-viewing disabilities can view information. For large amounts of readable content, use a white background with black text for a highly readable contrast. A good test to ensure pages have enough contrast is to print them out in black and white from a screen print and make sure you can still read the detail.

Guideline 3: Use Markup and Stylesheets and Do It **Properly.** There are many advantages to using stylesheets. A Web site utilizing a Cascading Style Sheet uses only one CSS file to apply all the styles/formatting for text, paragraphs, images, margins, padding, list and colors to numerous pages. This means that making overall style changes to a 200-page site can be made by just changing one attribute on one stylesheet.

The correct use of a stylesheet is to include the color hex number rather than color name. Content developers should always specify "fall back" fonts to ensure that if the font that is listed is not available on the user's computer, it will have another font listed as a default.

Guideline 4: Clarify Natural Language Usage. Developers need to identify foreign language changes within the content so that users with disabilities can have this content translated appropriately. The primary language should be identified in the header tag and abbreviations, and acronyms should also have the correct markup so that they will translate properly.

LETTERS TO THE EDITOR

PROTO PROMOTION

I am disappointed that protospecifications (technically incomplete) such as WS-Transaction and WS-Coordination get so much attention ["Web Services Momentum Continues," Jan. 1, page 1, or at www .sdtimes.com/news/069/story3 .htm] when there is an already agreed upon, usable specification available from OASIS that does the same thing. Promotion by the IBM/Microsoft duopoly seems to be the only thing that matters in Web services.

William Z. Pope

HUSKERS AT THE FORE

You report that Purdue established the first computer science degree program around 1968 ["The Year That Was: 2002-Passing," Jan. 1, page 22, or at www.sdtimes.com/news/069 /special1.htm]. I graduated from high school in 1967 and started electrical engineering at the Uni-

versity of Nebraska. In 1968 I switched majors to computer science, graduating with that degree in 1971.

They granted master's degrees at that time as well (which I got also). Ph.D.'s were added a few years later. At the time I entered the program, it was already fully established with its own dedicated staff and building. I don't know when it was formed, but I believe it was a couple of years before me. You may want to check with the University of Nebraska computer science department. I wasn't under the impression that we were the first to offer a full program, but we were certainly among the first.

Steve Jones

Vice President, Engineering PointBase Inc.

VISUAL FOXPRO A HIDDEN GEM

Regarding Oliver Rist's column in the Jan. 1 issue ["There's

More to Life Than SQL Server 2000," page 27, or at www .sdtimes.com/cols/winwatch 069 .htm], there's a Microsoft database that simply wasn't mentioned—Visual FoxPro.

Please take a look at the latest beta for VFP located at http: //msdn.microsoft.com/vfoxpro. Visual FoxPro is Microsoft's hidden gem. As Microsoft states, Visual FoxPro is compatible with .NET and doesn't have the disturbing runtime licensing issues.

Bill Anderson

Editor's note: Mr. Anderson is president of the Los Angeles County FoxPro Developers Group.

In the January issue of SD Times. Oliver Rist states: "On the downside, MSDE has no native front end of its own—use either Access, SQL Server or Visual Studio to build one.'

Really? When did SQL Server come with a front end? If you have SQL Server (any version), you either make your own front

Guideline 5: Create Tables That Transform Gracefully. Unless tables are properly marked up, accessibility agents cannot correctly read HTML tables. The solution is to provide checkpoints in the coding tables for improved accessibility. This code also helps with searchengine optimization.

To aid accessibility in tables, make use of the summary attribute placed within the table tag. This attribute clarifies the purpose of the table and describes the table's content. Columns and rows are given identifiers within their tags so that user agents can recognize the table's content and index the content in a comprehensible order.

Guideline 6: Ensure That Pages Featuring New Technologies Transform Gracefully. Having a page that utilizes new technologies and displays correctly in all browsers has always been a problem. To make your site accessible, all the pages need to render in older browsers or for users with scripting features turned off. How can this be done? The answer is to provide alternative accessible pages or ensure that the event handlers are input device independent. Web pages that utilize frames should use the "NOFRAMES' tag at the end of the frame set, and pages should be developed so that they will render readable even when stylesheets are not utilized by older browsers.

end from Access or VB or C++ or some other 3GL or 4GL, or you never put data into SQL Server. End of story! There is no front end to SQL Server—never has been, never will be-according to the Washington Weenies.

Their point of view is, after all, cash. Why would they give you something for free, when you can easily buy it? Along with the goofy SQL Server pricing, I'm waiting for the SQL Server version in which the cost is determined on a "per-transaction" basis. Ahh, now that's the life of a never-ending cash flow!

Jeff Schwartz

'STANDARDS' SHOW SEAMS

I have a different view with respect to Andrew Binstock's column ["IBM Continues Disturbing Trends," Jan. 1, page 29, or at www.sdtimes.com/cols /middlewatch 069.htm]. Software tools, databases, groupware and the other multitude of tools "hooked" into an app server don't necessarily have to be a

Guideline 7: Ensure User Control of Time-Sensitive Content. Users need to be able to control animated text. Many times users with accessibility issues cannot read rapidly moving text, nor can screen readers render animated text. So content developers should place controls on the page that allow the user to pause the animations and provide alternative means to display the information. It's also important to avoid using blinking text so as not to trigger

Guideline 8: Ensure Direct Accessibility of Embedded User Interfaces. Many Web page objects like Flash or Java applets have their own interface and therefore are not readily accessible for those using accessibility agents. These objects aren't controlled by HTML, therefore accessibility must be built into the objects or another way must be found to display the same information.

Guideline 9: Design for Device Independence. All Web-page elements must be accessible by means of a variety of input devices, such as the user's mouse or keyboard shortcut. Scripts should specify logical event handlers, but this may be difficult if you are waiting for the user to select something. If logical handlers cannot be used, then two device input event handlers can be used, such as "onKeydown" and "onClick."

part of the J2EE implementa-

tion to be standardized.

First of all, most of these tools were here long before the application server. These tools were developed to be proprietary. Today, however, the flavor of the day is standards—it almost has to be in the open world of Web services, where implementations won't be protected from corporate LANs or firewalls. Take BPEL4WS. Fortunately, IBM, Microsoft and BEA were able to come together to make this happen—so far.

Second, if you tried to pick best-of-breed tools, and mix and match app server to tool set to database to message queuing implementation, your IT shop was in for a nasty job to make these different products interoperate. Has anyone tried publishing an EJB developed with JDeveloper onto WebSphere, or an EJB developed with VisualAge onto an Oracle AS? This is the main reason why customers still choose to buy a total vendor

and to aid in navigation. solution—the very same customers who beg to purchase standards-based software. Capri-

cious, isn't it?

My point is that all J2EE implementations have tough times seamlessly integrating the pieces of the technology even though they are based on standards. This isn't a trend-it's the norm, and IBM certainly isn't setting this trend.

Finally, if the effort to standardize continues, I believe that secondary tools will be based on open standards as well, again not necessarily a J2EE standard. You see this today with IBM's WSAD-which, as Binstock mentions, is based on Eclipse. Tools, databases, voice-enabled apps or whatever may not necessarily be standardized within a J2EE implementation, but they will be standards of their ownas is BPEL4WS, because customers are demanding it.

Cem Fuller

Software Developer Minute Maid Inc.

Guideline 10: Use Interim Solutions. It's important for assistive solutions and older browsers to work together. One of the things I love about this guideline is that one of its checkpoints regulates the opening of new windows without informing the user. This would mean the end of uncontrollable pop-up windows! This guideline also covers the positioning, naming and placement of form field descriptions inside label tags. Form labels should precede the form element they describe, and form elements should utilize tab indexing so users can navigate through the form without the assistance of a mouse.

Guideline 11: Use W3C Technologies and Guidelines. Outside of the W3C guidelines for accessibility, there are a number of other generic guidelines the W3C (www.w3.org) suggests for Web site design. By using the technologies and guidelines it specifies, all sites will become clearer and easier to use.

Guideline 12: Provide Context and Orientation Information. Content developers need to provide information and orientation on grouped elements such as navigational elements and content in tables. This can be done by providing a structural orientation of information within the page's content, to help users in accessing information efficiently and comprehensively

Guideline 13: Provide Clear Navigation Mechanisms. Web sites should use text links that easily and efficiently describe where a user is going when he or she clicks. Alt tags need to be utilized when a graphic is used to navigate. Title attributes need to be linked with text links to clarify destinations. For larger sites, it is important to provide a page that has the site's layout structure, such as a site map and/or site-searching functionality.

Having clear navigation also helps with search-engine optimization, because the spiders have a clear path to follow and the alt tags provide another opportunity to convey key words related to the linked page.

Guideline 14: Ensure That Documents Are Clear and Simple. Use a consistent page layout, graphics that are recognizable and content that is written clearly and concisely, and avoid tricky interfaces and wording.

For additional information about Web accessibility, I suggest visiting the HTML Writers Guild's AWARE Center at http://aware.hwg.org. AWARE's (Accessible Web Authoring Resources and Education) mission is to serve as a central resource for Web authors who want to learn about Web accessibility.

Mary Elges is a Web designer at Pinnacle Decision Systems Inc.

MICROSOFT 'COERCION'

In response to Mr. Vaughan-Nichols' column ["Benchmarks in the Middle," Dec. 15, 2002, page 22, or at www .sdtimes.com/cols/javawatch_068 .htm], although .NET use is minimal today, Microsoft no doubt has the will, and certainly the leverage, to "artificially" expand the .NET developer base, using techniques of coercion that it has applied in various areas.

That's my only reservation about your article, which I found to be articulate, interesting and pertinent.

David Moffat

Student Information Services UNC-Chapel Hill

Letters to SD Times should include the writer's name, company affiliation and contact information. Letters become the property of BZ Media and may be edited. Send to feedback@bzmedia.com, or fax to +1-516-922-1822. Please mark all correspondence as Letters to the Editor.

February 15, 2003 - Issue No. 072

Publisher Ted Bahr

+1-516-922-2101 x101 • ted@bzmedia.com

Editor-in-Chief

Alan Zeichick

Executive Editor David Rubinstein

+1-516-922-2101 x105 • drubinstein@bzmed

Senior News Editor

Edward J. Correia

+1-516-922-2101 x100 • ecorreia@bzmedia.c

Copy Chief

Patricia Sarica +1-516-922-2101 x106 • psarica@bzmedia.com

Art Director

Mara Leonardi

+1-516-922-2101 x109 • mleonardi@bzn

Columnists

Andrew Binstock

abinstock@pacificdataworks.com Oliver Rist

orist@fb2corp.e

Steven J. Vaughan-Nichols sjvn@vna1.com

Contributing Writers

Alyson Behr

aluson@hehrco

Jennifer deJong

jdejong@vermontel.ne Lisa Morgan

Larry O'Brien

larryo@thinkingin.ne

Esther Schindler

esther@bitranch.com

Advertising Sales Representatives

Southwest U.S.

Julie Fountain +1-831-476-1716 • ifountain@bzmedia.com

Northeast/North Central U.S./Canada

David Karp

+1-516-922-5253 • dkarp@bzmedia.com

Northwest U.S./Canada

Paula F. Miller

+1-925-831-3803 • pmiller@bzmedia.com

Southeast U.S./Europe

Jonathan Sawyer

+1-603-924-4489 • jsawyer@bzmedia.c

Director of Circulation & Manufacturing

Rebecca Pappas

+1-516-922-1818 • rpappas@bzm

Circulation Assistant

Phyllis Oakes +1-516-922-2287 • poakes@bzmedia.com

Office Manager/Marketing

Cathy Zimmermann

+1-516-922-2101 x108 • czim

Customer Service/Subscriptions +1-866-254-0110 • service@bzn

Bookkeeping Services Ken Hafner • Kiwi Partners Inc.

khafner@kiwipe

Article Renrints

Keith Williams • PARS International Corp. +1-212-221-9595 x319 • fax +1-212-221-9195 reprints@parsintl.com



BZ Media

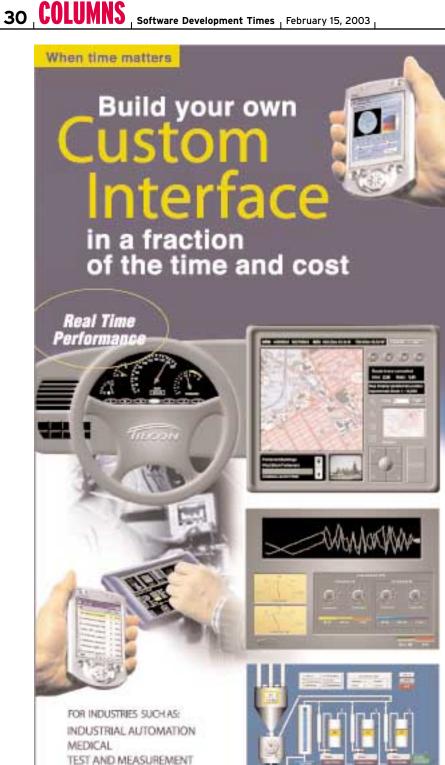
BZ Media LLC

Oyster Bay, NY 11771 +1-516-922-2101 • fax +1-516-922-1822 www.bzmedia.com • info@bzmedia.com

President Ted Bahr

Executive Vice President

Alan Zeichick



- Tilcon is the fastest and easiest to develop with.
- Interface prototyping and simulation does not require any coding.
- Scalable for memory constrained devices.

WIRELESS TELECOM _AND MORE

AUTOMOTIVE

- Fully distributed for remote control/display under any combination of supported platforms.
- Mapping Module for GPS, GIS applications.
- OPC Module for Industrial Automation.
- ODBC Module for database connection.

Target Platforms Windows® CE (Pocket PC) Windows®CE.NET VxWorks® QNX® XP/2000/NT/98 XP Embedded

NT® Embedded

Download and Test Drive Tilcon for 30 Days FREE!!

www.tilcon.com



tel:800-665-5928 or 613-226-3917 infonews@tilcon.com





RECON is a trademark of RECON Software Ltd. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All other company and product names are trademarks of their respective corporations.

Xtreme Simplicity's C# Refactory and **JetBrains' IntelliJ IDEA**



www.sdtimes.com

Code refactoring tools target .NET, Java platforms

BY LARRY O'BRIEN

If there is any programmer who doubts that naming is vital to thought, look no further than Martin Fowler's 1999 landmark book "Refactoring." There had been virtually no prior discussion in print of the techniques by which pieces of functioning code are incrementally changed and, one hopes, improved. In a profession where "iterative and incremental" is one of a very small number of universally accepted verities, it seems incredible in retrospect that there had been a vast silence about the specific techniques of manipulating existing code.

While refactoring can be done by hand, it tends to be tedious and errorprone. A few new tools, though, make the process of clean refactorings (almost) as simple as cut-and-paste.

Xtreme Simplicity's C# Refactory is a plug-in for Visual Studio .NET. I looked at the 1.05 release, as well as the 1.2 beta. Installation is trivial—download an installer file, read and click a license agreement, and you're done. C# Refactory installs a new cascading menu item in the Visual Studio .NET "Edit" menu and in the context menu that appears when you right-click on code. The tool implements the most common refactorings—renaming variables, methods and classes, and the most important "extraction" refactorings, such as converting a block of code into its own method or moving certain fields and methods into a new superclass. These extractions are the fundamental tool in the battle against cut-and-paste: C# Refactory makes it easier to do the right thing than the wrong thing.

To extract a method, for instance, one highlights the code of interest, invokes a context menu, and faces a quick dialog to name the new method and rename parameters as appropriate. In the unnoticeable time before the dialog comes up, C# Refactory parses the highlighted code and determines which variables within it must become parameters to the new method, which must be references or should serve as the return value, and which variables can be local to the new method. C# Refactory creates the new method and inserts the call to it. It's clean, simple and fast.

JetBrains Inc.'s IntelliJ IDEA started as a tool for refactoring but has evolved into what I believe is simply the best Java development environment available. Currently in its third release, it's the type of product one grows fanatical about: I've been using IDEA since its first release and consider it essential to my Java development. It blows the doors off any other IDE for straight JDK work, although it does not have formbuilding tools or the Enterprise Java-Beans-specific wizards of, say, JBuilder. A native Java application, IDEA is easily configured to run with different JDKs and has built-in support for such tools as Ant, CVS, Glue and jUnit. It supports J2EE development, including EJBs and JavaServer Pages tag libraries.

IDEA supports more than 20 refactorings directly and includes other commands that could be viewed as refactoring, such as optimizing import statements. Refactorings range from the essential renaming and extraction abilities to more sophisticated functions, such as "Replace constructor with Factory method" and "Replace inheritance with delegation."

IDEA is trustworthy. On my last Java project, our client asked us three-quarters of the way through the project if it were possible to modify the error-handling strategy dramatically (from internal to external). This touched every single use-case in the system. This is the type of task-spanning dozens of packages, modifying classes one didn't write and hasn't studied, jumping up and down abstraction levels—that can cause enormous trouble if every step is not done thoroughly and consistently.

"Intention Actions" is a unique feature that is somewhat startling. Occasionally, while coding, a light bulb triggering a drop-down list will pop up beside the current line (similar in appearance to the "Smart Tags" in Office XP). The contents of the dropdown list contain a context-aware guess of what you intend to do. Type "foo" on a blank line in a method, and IDEA might offer to generate the code to "Create field 'foo' " or "Create local variable 'foo.'

Refactoring is the code-centric process of improving the design of existing code and accounts for a large part of the professional programmer's working day. .NET programmers can get a sense of the power that a refactoring tool can provide via C# Refactory, but Java programmers can have in IDEA the finest tool for writing (and rewriting) code available on any platform. ■

Larry O'Brien, a frequent contributor to SD Times, is an independent technology consultant and analyst, and the founding editor of Software Development Magazine.

Software Development Times | February 15, 2003 | COLUMNS

THE WINDOWS-ONLY TWO-STEP

n the predawn of its latest operatingsystem release, Microsoft is setting the tone for 2003-lots of new software releases. And a big factor in all these upcoming releases is Microsoft's perspective on XML. The question is whether this XML perspective is based in reality or in more of that nebulous vapor known to envelop much of the Northwest.

Microsoft is sure trying to do away with any vapor taint. Recently, the company churned out three new tools to help developers better exploit XML. The first is XSD Schema Validator, which allows programmers to verify the validity of their schemas or check on the configuration of an XML document against W3C standards. XML Diff and Patch is the second tool, enabling developers to pinpoint the differences between two XML files and then fix the original XML file with the changes made in the other. The third is XSD Inference 1.0, which creates an XSD schema along with an XML instance document. This allows developers to almost auto-create an XSD schema from a source document with the ability to refine that schema in the future.

In addition, the boys from Redmond, notably Don Box, a Microsoft .NET software architect speaking at December's

Baltimore-based XML Conference & Exhibition, have dropped some tantalizing tidbits about upcoming Microsoft XML releases, including an XML-capable version of Office and a new XML development language that Northwestern rumormongers have dubbed X#. X# is supposed to ease the task of XML schema definition by providing embedded support for this function within the language.

Again, however, Microsoft maintains that any mention of X# is based entirely on hearsay and the company has no official position on the topic.

Beyond rumors, the real Microsoft XML news has been XDocs, a new XML editing prototype technology that may or may not become the new productivity suite paradigm in some

future version of Office. Microsoft has already placed new XML capabilities into Office 11, previously discussed in these pages, intended to allow users to access corporate data stores via their Excel and Word applications, thus paving the way for the concept of Office as a corporate data viewer as well as productivity tool.

While the security implications of wiring Office directly into my corporate data store still make me shudder,

the future implication of being able to directly manipulate productivity data in XML via XDocs does have numerous benefits for users as well as developers. Some of these have been realized by the open-source community with suites such as Open Office, whose native format is based on XML. But these implementations are mostly limited to layout-style descriptives rather than any intelligence about the document's contents. As it's laid out today, XDocs should easily take a step beyond

> such tools by providing direct and even dynamic intelligence about document content and data type.

NET WATCH

That's because XDocs may end up replacing or largely supplanting traditional Office applications. Users will still create documents via methods familiar to them, but they will be able to

specify document- or content-specific XML schemas. Sounds great, but I'm reserving judgment until I see a final version of XDocs in action. Being able to specify tag functions and schema definitions easily while still being able to handle presentation problems in a WYSI-WYG-style user interface would indeed be a boon for developers. But I still don't see it being that popular with run-ofthe-mill users.

But that's just my lack of faith in Microsoft's GUI designers. Allowing XDocs to develop a single user interface for the creation of any document type, and encapsulating all that document data within XML would conceivably allow Redmond to move such a document between user interfaces of varying intelligence and complexity. In other words, we wouldn't necessarily be stuck with a single XDocs interface, but could have several such interfaces designed with the needs of different users in mind, yet imbued with the ability to transfer XDocs-based documents between them seamlessly.

Regardless of personal doubts, XDocs is certainly an exciting concept, both for the future of XML as well as Web services-right up until you run into the ".NET-only" barrier.

That's right: As it stands today, Microsoft has indicated that XDocs will be usable only on systems running .NET, which at the moment, still means Windows. While XDocs is definitely a more ambitious step than any being implemented by either the W3C or open source at this time—and certainly implies a paradigm shift in the productivity suite market—offering it on a .NET-only platform is enough of a limitation to prevent the technology from becoming a market standard. ■

Oliver Rist is a freelance technology journalist and president of FB2 Corp., a New York-based software manufacturer.







Web Services Panel Discussion

"A Road Map for Web Services Standards"

International Web Services Conference & Expo

Med Services Edge Zulid

CONNECTING THE **ENTERPRISE WITH** WEB SERVICES, JAVA, XML, AND .NET

March 18-20, 2003 Boston, MA web services conference

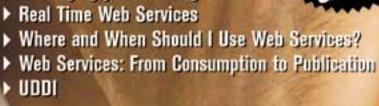






Featured technologies and topics will include:

- Interoperability
- Enterprise Networks
- Securing Web Services
- ► Integrating existing networks
- ▶ Leveraging your existing software
- Real Time Web Services
- ▶ Web Services: From Consumption to Publication









For more information visit

or call





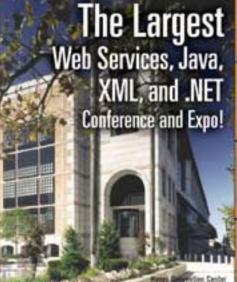






developer products and solutions.





Over 200 participating companies will display and demonstrate over 500

Over 3,000 Systems Integrators, System Architects, Developers and Project

Over 100 of the latest sessions on training, certifications, seminars, case-studies, and panel discussions promise to deliver REAL Java Benefits, the industry pulse

Contact information: U.S. Events: 201 802-3069 or e-mail grisha@sys-con.com • European & Asian Events: 011 44 208 232 1600





































www.sdtimes.com Software Development Times February 15, 2003 COLUMNS 33

WATCH

STEVEN J. VAUGHAN-NICHOLS

WEB SERVICES STANDARDS GET MESSIER

et me get this straight. In one corner, we have BEA, IBM, Microsoft, RSA, SAP and VeriSign announcing a trio of new security standards riding on WS-Security: WS-Trust, WS-Policy and WS-SecureConversation. In the other corner, weighing in at over a trillion in net worth, we have Fujitsu, Hitachi, NEC, Oracle, Sonic and Sun pushing WS-Reliability to bring some sense to message reliability.

Is there something missing here? On the security side, we have all these major players, except Oracle and Sun, and on the reliability front, we've got a lot of heavyweights, except Microsoft and IBM. Now, as I report in "Web Services Standards: Maturing or Fracturing?" (page 26), some analysts, like Jason Bloomberg of ZapThink, think that it will all work out in the end. More than that, Bloomberg seems to believe that the companies divided up the work so that the overall standardization of Web services happens sooner rather than later.

Maybe some of the engineers honestly believe that all programmers and developers should be working together to create open systems and standards for everyone's benefit. I can buy that. I've known people in the business that really do operate that way.

But based on what I've seen in my decades now of watching the technology companies work and play with each other, I don't believe for a second that these consortiums are going to do the right thing. No, they'll end up wrestling in the dirt and making a muck of Web services.

I don't know about you, but I find it very helpful to think of technology companies as being a lot like fifth-grade boys: The big ones rule, the smaller ones follow, and there's always a lot of fighting and name-calling. I can't see it being any different in the Web standards

playground.

The name of the game for the big vendors ultimately is King of the Hill. Whoever ends up on top of the hill with a popular standard first wins. Don't believe me? Well, just sit back in your La-Z-Boy and watch your Betamax release of "The Fellowship of the Ring," while I talk to everyone else.

What will make this game even more of a mud bath than usual is that Web standards don't just need one standard, they need about a dozen. And, last but not least, there's no bewildered referee to declare a winner.

Who decides what's a real Web standard? The IEEE isn't it, and I'm sure some of its members are extremely glad that they're not involved with this mess. The IETF has enough problems. ECMA? Maybe it should be, but it's not. The W3C is sort of, kind of, part of the standardizing solution for Web stan-

dards, but most of the vendors I know don't like them. OASIS will be playing a large role.

I had thought that the WS-I was going to be the be-all and end-all of Web services standardization efforts once Sun was finally in, but its mission seems to be to make sure implementations of Web standards work together rather than making sure the standards edges fit together in the first place.

So who will decide who wins? Who decides which proposed standard

becomes a real standard, and—the all-important part in software development—how these standards will work together?

In the long run, yes, open standards that everyone agrees on will make everyone richer. Just a brief look at the history of technology shows that it's when everyone finally agrees on how

to run things that people start to really make money. And, despite the often illusionary riches of the 1990s, we never made it to that point in software.

But, with Microsoft and Sun going at each other hammer and tong in the courts, and no one trusting Ralph Ellison either at the America's Cup race in New Zealand or in business, I don't see Web services standardization coming anytime soon.

I don't know when we will have a good open answer to software development, but I have a bad feeling that Web services won't be where it will happen. Worse, Web services are going to be deployed in a piecemeal, ad hoc kind of way.

Remember the bad days of the browser wars? There were many pages that simply wouldn't work—period, end of statement—with some browsers. That's where we're going. We'll have Web services "standard" enterprise servers that won't work with Web services "standard" IDEs that won't work with Web services "standard" middleware and so on.

Only it will be worse. At least in the awful days of incompatible ORBs, you could usually figure out which pieces from which vendors would work together. With Web services, there are just so many different pieces, the only safe thing for developers to do will be to stay with one vendor.

That means trouble, real trouble, for the Java companies. Unless the Java powers coordinate their Web services standardization efforts, we'll end up with the same kind of trouble we already have getting Java programs from different companies working together.

And when I think about that sometimes, I look at Microsoft and .NET and think that, even though the boys from Redmond are in a heap of legal trouble, they may still end up king of the hill—unless the Java companies start playing with each other, instead of against each other.

Steven J. Vaughan-Nichols is editor of Practical Technology (www.practicaltech.com) and has worked as a programmer for NASA and the Dept. of Defense.

IT'S NOT EASY HANDLING MOBILITY

What's the next big thing? Mobility. The next two years will see a greater focus on mobile workers. These employees will have in common only the salient trait of being intermittently connected to the Internet. Otherwise, their hardware, their software and their needs span a frustratingly wide gamut encompassing all of today's hardware/software systems as well as others not yet available.

Because of this variety, analysts are finding it difficult to know what exactly to recommend to sites in preparation for this forthcoming development. Consider for example, the issue of the hardware at the client end point. Nearly all possible options are currently undergoing accelerated evolution. And in almost all cases, that evolution is tending toward product convergence. The convergence of handheld computers and smart phones is the most well known; it will ultimately expand to include the current BlackBerry functionality, which spans both product categories.

Higher up the market—and on a most precarious perch—are the handheld PCs, those laptop-like devices that use Windows CE. Above them are laptops, which have traditionally observed a distinctly marked DMZ between themselves and desktop systems. The key differentiators in this separation were processing power and its twin cousin power consumption; notebooks offered lesser performance because they consumed less power.

Recently though, due to the favorable pricing of Pentium 4 processors, these desktop chips have been finding their way

into notebooks, thereby creating more powerful, power-hungry laptops. These devices, sometimes called "desknotes," outsold traditional notebooks during the 2002 holiday season, and new robust models from HP and Toshiba are furthering the trend. The only thing that now distinguishes portables from desktops

is weight, form factor and the key element: the fact that only the desktop boxes are constantly connected.

Separate from these devices are tablet PCs, whose actual presence beyond the recent hype has yet to be established, although they will undeniably become important client devices soon.

This remarkable variety of devices means user interfaces cannot be designed uniformly for all devices because form factor differences are so great. Likewise, processing power differs so much that applications might have to be substantially redesigned for different platforms (consider Microsoft's Pocket Excel, for example).

Indeed, ISVs will be obliged to write multiple versions of their products. Shipping the same software for multiple client devices will increasingly become a suboptimal design. And vendors who do not respect these differences will soon find their products passed over by pur-

chasing managers.



WHAT TO DO?

Of the numerous changes to consider, the most important is the effect of occasional connectivity on applications. In other words, how to write software that no longer assumes constant connectivity. This change has

important implications.

First of all, security. If applications require sign-on, you cannot assume that a directory will be available on the network to validate user credentials. Authentication and authorization need to rely on encrypted data on the local machine. For some applications, this might not be strictly possible. In such a case, designers should consider allowing the user to continue working and then enforce the authentication when the user reconnects with the network—

before any updates are made or any data is transferred to the hosted applications. However, blocking users from working because they're not connected will be a mortal sin. It's close to being one now.

This approach of a pro-tem ability to go forward while not connected should become the norm. Developers must learn to queue transactional data and process it asynchronously at reconnect. This means that work must be allowed to continue even if transactions are pending. Offline processing of e-mail is the canonical example of this. A common way to handle this requirement is through the use of messaging middleware. Messages are dropped into queues, and the middleware handles queue processing (with the attendant security issues) at reconnect.

Note that server-side programs must use the same paradigm. They need to handle queued transactions and know how to provide for sudden client disconnects without corrupting data or transactional integrity.

There are many other issues that intermittently connected clients impose on software design, and surprisingly, middleware provides effective solutions for many of them. We will discuss additional issues and solutions next issue. **I**

Andrew Binstock is the principal analyst at Pacific Data Works LLC.

BENEATH THE BUBBLE

DAVID RUBINSTEIN

When Ray Lane was Oracle's president and chief operating officer, the company's tag line was "The Internet Changes Everything." Now a partner at Silicon Valley venture behemoth Kleiner Perkins Caufield & Byers, Lane was in New York last month at a breakfast meeting sponsored by data integration solution provider MetaMatrix (in which Kleiner Perkins is an investor) to declare

that the Internet has in fact changed many things. Yet he believes the industry only has scratched the surface of what the Web can become.

Much has evolved in the 400 or so weeks since the introduction of Netscape. People have access to more information than they've ever had before—even if

much of it involves mortgage refinancing or stashing the funds of some fugitive African official. And, that access is just about immediate. These two simple facts, said Lane, have forever changed the way companies do business, giving customers more power than ever before and forcing businesses to reassess their relationships with those customers and with their trading partners. The dot-net bubble can be seen as the point in time at which the game of business was irrevocably altered.

Before the Internet, businesses in many cases did not take an enterprisewide view of their technology infrastructure. If sales needed data, a sales database was created. If manufacturing and warehousing needed data, they were given databases. If a business partner needed information, he was given yet another way to reach the company. Unfortunately, no one had the vision at the time to link these up.

Now, it again falls to the technology departments to lift corporations and organizations out of the mess that the same technology departments got them

into. Again, businesses are being asked to have blind faith that the next solution is the correct one. That's a lot to ask for, considering it was IT that convinced the corporate bosses to install hugely expensive SAP or Oracle systems that created these data silos in the first place.

Yet Lane believes that technology, if used the right way, can help businesses reduce costs and latency. He made the

point that knowing what we know now, if he were starting a business today, he could do it for 30 percent less cost than it takes to run the business now.

The challenge, of course, is taking a business with thousands of databases and even more thousands of applications and getting them to run in a way that

makes the business always on, adaptive and collaborative.

The business process "customer wants to place an order" is a very complex one and touches upon multiple underlying systems. That's why Lane said ERP systems are so expensive to install and maintain. Businesses need to streamline that, to make the process more efficient, to make it able to adapt to changes, and to sync up with salesmen in the field, inventory tracking and suppliers in a secure way.

But, having spent tens or even hundreds of millions of dollars on an ERP system, it's not likely that a business is going to rip one out. Therefore, Lane said, whatever comes down the pike for what is being called enterprise information integration will happen at a layer on top of the ERP stack and not within it.

In Lane's view, the IT architecture of the future is an upside-down presentation of today's enterprise architectures, with the ERP stack at the bottom, a layer for metadata models sitting above that, then a layer for developers to create apps to the metadata layer without worrying about the underlying systems, and then at the top, a layer where business analysts can create Web services and federated applications for the end user. Ultimately, Lane projected, the end users themselves will be able to create programs for themselves.

Lane and other believers in metadata modeling say there is a religious war being fought between data architects and programmers. "The solution is to take this decision out of the developers' hands," Lane said. "It's a high-level management issue. Programmers are standing in the way of implementation. It will have to happen top-down."

Enterprise information integration, he continued, allows the source data to be brought up to a level where a business analyst can ask for it in a single definition—even though the description and content might be different—and rationalizing it at a metadata layer. For instance, a user can ask for "customer," even though in one system that might mean last name-first name, and in another system it might only be a number.

Lane can see a time when customer pull replaces a sales push, as the Internet gives customers the ultimate leverage to name a price and feature set. And the company will be better able to respond to a customer's wishes because the company will be able to more quickly access the data it needs from suppliers, trading partners and delivery systems.

This is what the dot-com bubble gave the corporate world—not tissues and nasal spray for sale on a Web site. It showed the Internet is a powerful tool for both buyers and sellers, but it also revealed that businesses have a long way to go to link up all their legacy systems with new Web presences to cut costs and optimize the transactional experience for both sides. ■

David Rubinstein is executive editor of SD Times.

DATA WATCH

BUSINESS ERIEFS

In a sign of consolidation in the technology research and analysis field, Forrester Research Inc. is acquiring Giga Information Group Inc. in a deal worth approximately US\$51 million, the companies have announced. Forrester said the move will strengthen the company after a round of layoffs last summer and declining revenues. The deal is expected to bring Forrester about 900 of Giga's customers . . . Investigators from the U.S. Securities and Exchange Commission last month issued subpoenas to Computer Associates International Inc. regarding the company's accounting practices. CA has asked the investigators to work with the company, and not its clients, to gather information about the accounting procedures, which have been under investigation for a year. On a conference call, CA chief executive Sanjay Kumar said the company is continuing to work with the government. Separately, the company announced it had narrowed its net loss to US\$44 million at the end of its third quarter in December from \$231 million the previous year. Revenue for the quarter was \$778 million, a 4 percent increase over the year-ago guarter but short of estimates . . . Online job recruitment service Dice Inc. has agreed to a restructuring that will take the company through bankruptcy with the goal of being debt-free by the middle of this year, the company announced. The deal requires Elliott Associates L.P. and Elliott International L.P. Dice's largest debtors, to forgive a note of US\$69.4 million through a bankruptcy filing that will result in Elliott's owning roughly 46 percent of the new, privately held company, with the largest current shareholders owning the rest. Last month, Dice won an extension from the Nasdag stock market to continue to have its stock listed on the exchange despite failing to meet minimum stock price and market value requirements. That exception is due to expire March 28. ■

CALENDAR OF EVENTS

BEA eWorld Orlando, Fla.

March 2-5

BEA SYSTEMS INC.

www.bea.com/events/eworld/2003

XML Web Services One March Santa Clara

101 COMMUNICATIONS LLC

www.xmlconference.com/santaclara

Application Development March 4-7 & Integration

Orlando, Fla.

GIGA INFORMATION GROUP

http://appdevus.gigaweb.com

Software Test March 10-13
Automation Conference & Expo
San Francisco

SOFTWARE QUALITY ENGINEERING

www.sqe.com/testautomation

Integration Technologies Forum March 17-18

Technologies Forum Santa Clara

/conferences/ITF2003

THE YANKEE GROUP www.yankeegroup.com/public/events

For a more complete calendar of U.S. software development events, see www.bzmedia.com/calendar.

Information is subject to change. Send news about upcoming events to events@bzmedia.com.

Emerging Technology Budget As a Percentage of Revenue and IT Budget



In a recent Gartner Inc. survey of enterprises' spending on strategic emerging technology planning groups, the median amount budgeted in 2001 for emerging technology activities was 0.037 percent of all revenue, and 1.94 percent of total IT spending. For this study, emerging technology activities were defined as tracking, evaluating and piloting new technologies for IT, but excluding R&D for the business's own product development.

Smaller companies spent a larger percentage of their IT budget on emerging technology research; businesses with less than US\$100 million in revenue spent fully 7.5 percent, while corporations with more than \$5 billion spent only 0.83 percent.

The majority of companies that characterize themselves as early technology adopters have a full-time planning group, but most other businesses conduct their technology planning through part-time or task-force activities, rather than full-time groups.

Source: Research Note, "Funding for Strategic Technology Planning: Survey Results," December 2002, Gartner Inc.,

www.gartner.com

KNOWLEDGE MANAGEMENT



www.sdtimes.com

David Karp Northeast/Central 516-922-5253 dkarp@bzmedia.com Jonathan Sawyer Southeast/Europe 603-924-4489 jsawyer@bzmedia.com Julie Fountain Southwest 831-476-1716 jfountain@bzmedia.com Paula F. Miller Northwest 925-831-3803 pmiller@bzmedia.com







analyze the problem

understand the customer needs

define the requirements

control the changes

deliver the right solution

start club for overachievers

be liberated

A job? A job is something normal people have. You, however, have 20 jobs. You have customers to satisfy. Requirements to meet. Changes to control. And more. But if you're lucky, you also have Rational. With solutions to help you visually describe and manage requirements. Solutions that automate traceability across your project's lifecycle, so you can control and communicate the impact of changes. And solutions that are flexible, easy to learn in a day and easy to expand over time. Find out how Rational can liberate you and help you satisfy your customers. Go to www.rational.com/offer/roadmap3 today to get your free roadmap to business modeling and requirements management.

